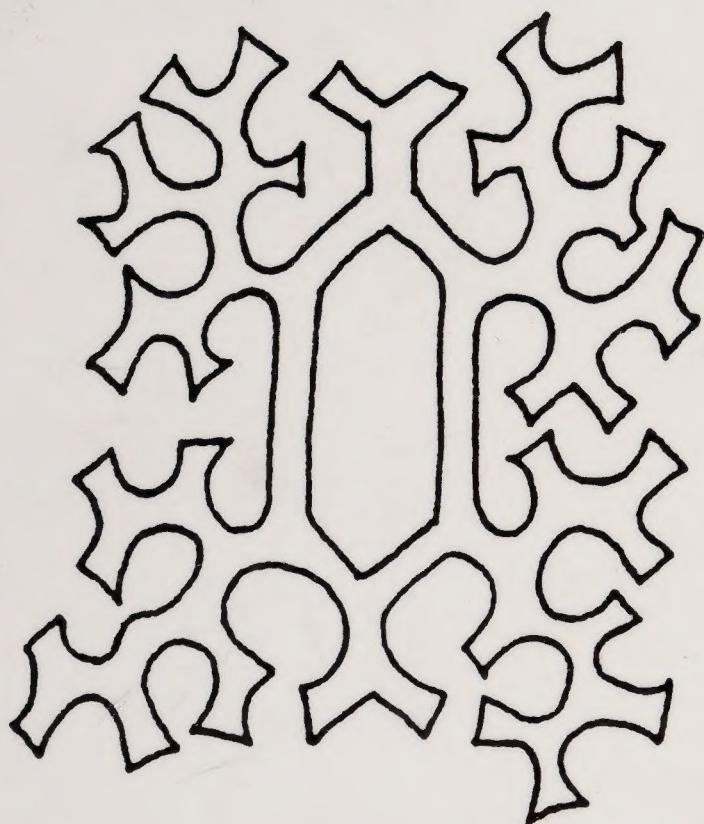


# VOWEL ROTATION IN URALIC: OBUGOCENTRIC EVIDENCE

DANIEL ABONDOLO



School of Slavonic and East European Studies  
University of London



Digitized by the Internet Archive  
in 2019 with funding from

UCL School of Slavonic and East European Studies (SSEES)

<https://archive.org/details/SSEES0014>

# **VOWEL ROTATION IN URALIC: OBUGOCENTRIC EVIDENCE**

**DANIEL ABONDOLO**



# **VOWEL ROTATION IN URALIC: OBUGOCENTRIC EVIDENCE**

**DANIEL ABONDOLO**

School of Slavonic and East European Studies  
University of London 1996

# VOWEL ROTATION IN URALIC: OBUGOCENTRIC EVIDENCE

Daniel Abondolo

*Vowel Rotation in Uralic: ObUgocentric Evidence*

© School of Slavonic and East European Studies 1996

SSEES Occasional Papers No. 31

ISBN: 0 903425 42 4

All rights reserved. No part of this publication may be stored in a retrieval system, or transmitted in any other form or by any means, electronic, mechanical, recording or otherwise, without the prior permission of the School of Slavonic and East European Studies.

Copies of this publication and others in the School's refereed series of Occasional Papers can be obtained from the Publications and Conferences Office, SSEES, Senate House, Malet Street, London WC1E 7HU

Printed in Great Britain by Quorn Selective Repro Limited  
Queens Road, Loughborough, Leics. LE11 1HH

ас уджысь он мудз



## Table of Contents

Introductory	1
Etymological Material	
1. Correspondence type 1 <sub>T</sub>	
1.1 *i   *i	24
1.2 *ī   *ī	28
1.3 *u   *u	30
1.4 *ü   *ü	32
2. Correspondence type 2 <sub>T</sub>	
2.1 *i   *e	35
2.2 Achromatic type *ë   *i (#)	39
3. Correspondence type 3 <sub>L</sub>	
3.1 *e   *e	55
3.2 *ë   *ë	62
4. Correspondence type 4 <sub>L</sub>	
4.1 *e   *ää	65
4.2 *ë   *aa	73
5. Correspondence type 5 <sub>L</sub>	
*ää   *ää, *aa   *aa	82
6. Correspondence type 6 <sub>T</sub>	
*ää   *ii, *aa   *uu	90
7. Correspondence type 7 <sub>T</sub>	
7.1 Achromatic correspondence-type @	104
8. Correspondence type 8 <sub>TT</sub>	
Appendix: etymologies limited to ObUgrian	124
Indices	
Ostyak	130
Vogul	133
glossarum	136
semasiological	140



## Introductory

**Background.** Hungarian is a Uralic language, and is traditionally placed, together with (Ostyak + Vogul =) ObUgric, in the Ugric branch of that family. This assignment is probably correct, but careful diachronists will be happier when the phonology of the Ugric node has been reconstructed. To that end, we desperately need good reconstructions of proto-ObUgric and of proto-Hungarian.

We have no good history of the Hungarian vowels, not even anything good enough to parallel Kálmán's concise 1965 treatment of the Hungarian consonants. It is not for lack of trying: first Munkácsi (1885, 1895) attempted to reconstruct proto-Finno-Ugric departing from Hungarian. He compared it first with Ostyak and Vogul, languages thought then as now to be Hungarian's closest congeners. Methodologically this was sound, but Munkácsi's Vogul materials were phonetically inaccurate and his understanding of the complex vowel correspondences and alternations obtaining within and among the Ostyak dialects was inadequate.

Over the next year, three attempts at Finno-Ugric reconstruction issued from Finland. Genetz and Setälä (both 1896) departed from Finnish and Lapp, comparing them at most with Mordvin; Wiklund (also 1896) tried to take all FU languages into consideration, but again used Finnish and Lapp as his departure point. The chief contribution made by Genetz, unfortunately neglected in subsequent years, was that he had noted that the vocalism of the second syllable must be considered at the same time as that of the first.

Gombocz 1909 attempts to trace a history of the Hungarian low vowels by examining their correspondences with Finnish. It is inconclusive.

Comparative-historical Uralic phonology did not come of age until Paasonen 1912-17. This was the major turning-point, even though it addressed the vowels only indirectly.

No real advance was made with Lehtisalo 1933.

The first advance in work with the vowels after Genetz was Steinitz 1944. Steinitz had noticed that two relatively remote wings of the Uralic family tree, Ostyak and Cheremis, had vowels subdivided into similar

subgroups which he termed ‘full’ and ‘reduced’. The difference between the sets was both phonetic (the full vowels tend to have greater duration and clearer, more distinct qualities) and phonological (the characterization of the reduced vowels does not normally require [+/- low]). What is more, the membership of vocabulary items to one set or the other often matched: the Vakh dialect of eastern Ostyak had reduced e, ö, and o in words which were cognate with words with corresponding reduced vowels in Cheremis, e.g. O Vakh kos- = C KB kâž- ‘urinates’, köNč = kœč ‘fingernail, claw’, pələŋ = pəl ‘cloud’. Steinitz reconstructed (short) high vowels to account for the reduced vowels of C and compared the short high vowels of Finnish *kuse-*, *kynte-*, and *pilve-*.

But the correspondences are not that simple, of course. One must also reckon, for example, with -ee-, not expected \*-e-, in Vakh Ostyak neem = C ləm = F nime- ‘name’, and with F -e-, not expected \*-i-, in Vakh Ostyak wər = C wər = F vere- ‘blood’. To account for most such complications Steinitz summoned that most weighty of reconstructive tools, the proto-alternation.

All present-day Uralic languages have paradigmatic or lexical vowel alternations of one kind or another. When reconstructing, Steinitz attempted not merely to take these alternations into account: he harnessed them as an explanatory force. Thus Vakh Ostyak has -ee- in neem ‘name’ (= C ləm) as a continuation of pU \*ee, a full vowel which alternated with the reduced \*e. Within Vakh Ostyak, synchronic alternations abound: alongside e~ee (and its analogues ö~öö, o~oo, and a~oo), which are restricted to the verb, there is also a full range of alternating pairs of high~low full vowels, e.g. aa~uu, ää~ii, even (again, only in verb paradigms) aa~uu~ii. See Steinitz 1950.26-8, Gulya 1966.39-41, Schiefer 1980.

Steinitz’ work has been criticised on two levels. On the one hand, the more alternations we set up for the proto-language, the easier it is to claim cognateness for pairs of words. Put another way, proto-alternations allow us to be less critical than we perhaps ought to be, to look less deeply and perhaps not long enough in our search for correspondences which are not trivial. In defense of Steinitz it must be said that it seems unrealistic from the viewpoint of universals to posit a proto-language which lacks alternations. Obviously, the safest way is one of moderation: we should posit alternations only where we need them, and if we find that we have become overly dependent on them, applying them ad hoc wherever our correspondences fail, we should revise our reconstruction accordingly. Steinitz needed his alternations to explain too many of his etymologies, and so his reconstruction of pFU failed to win general acceptance. His correspondences failed, and were thus in need of the remedy of proto-alternations so frequently,

because he took the vowel inventory of certain eastern Ostyak dialects to be pristine. We will return to this point below.

E. Itkonen believed that it was the vowels as they are distributed in Fennic that best preserved the original FU state of affairs. Since Fennic, and particularly Finnish, is relatively poor in paradigmatic and derivational vowel alternations, Steinitz' approach struck Itkonen as entirely wrong. Itkonen had already reconstructed proto-Lapp vocalism on the Fennic model (1939, MSFOu 79) and in an extensive riposte to Steinitz, did the same thing for Mordvin (1946). Itkonen went on to explain the prehistory of the Cheremis and Permian vowel systems (1954). And therein lies the weakness of the Itkonen reconstruction: it works well enough for the languages with which it began, but as it moves eastward one needs more and more to take recourse in sporadic changes and analogy. Itkonen's reconstruction never reached east of Permian; his inventory and sound-laws leave ObUgrian and Hungarian untouched (see Helimski 1984, especially page 243). It is interesting and often goes unmentioned that Itkonen was fundamentally in agreement with Steinitz as far as the history of many of the vowels themselves were concerned; much of the seeming disagreement, — for example Steinitz' \*e \*ö \*o versus Itkonen's \*i \*ü \*u — lay merely in minor matters which could have been tidied up by means of phonology.

A more subtle criticism which was levelled at Steinitz' work began with work on the prehistory of Cheremis. Bereczki (1968; 1971) observed that the key changes posited by Steinitz for pre-Cheremis, namely the falling of (high) reduced vowels and the subsequent raising of (non-high) full vowels, were typical of the Turkic languages of the Volga region where Cheremis has been spoken and therefore were not good evidence for anything archaic. Bereczki's initial impetus has given rise to a generation of important work on areal and Sprachbund features at play in Bashkir, Tatar, Chuvash and Cheremis, but the fact that these languages share vowel shifts may now be seen to reflect not areal convergence, but universals of change (Donegan 1978, Tálos 1983 and 1984, Labov 1994; see "Vowel Rotation", below).

Since the work of Steinitz and Itkonen there have been three attempts at an overarching reconstruction of proto-Uralic vocalism: Collinder 1955 and 1960, Décsy 1990, and Sammallahti 1979 and 1988.

Collinder's bias is clear: 'It is quite legitimate to assume (with Setälä, Lehtisalo, and Steinitz) that there existed several vowel alternations in P[roto]F[inno]U[gric] and PU[ralic]. But on the other hand, it is worth while to try to get along without this hypothesis.' (1960.151). Collinder's compendious little Finno-Ugric Vocabulary (1955) assembles a vast number of etymologies in a format which is extremely easy to use (provided the user

knows Finnish, Hungarian, or some other Uralic language, since the only indices are in these), and his Comparative Grammar (1960) attempts to deal with all this material, including the vocalic correspondences and their implied historical trajectories. But two things are lacking, and their absence may have hindered the advance of thinking in the field. First, there is no overview. Collinder's treatment of the development of individual vowels is piecemeal. At 1960.175, under the treatment of Collinder's pU short \*e, we read that that vowel either lengthened (under unspecified conditions) or gave proto-Ostyak \*e or (possibly after \*k) \*ö; at the corresponding place under the treatment of Collinder's pU long \*ee (196.177) we find, not an account of the development of this protovowel in Ostyak, but a statement concerning correspondences: "In Ostyak, Fennic \*ee seems to be reflected in the same way as Fennic [short] \*e." There is a paragraph which is apparently meant to sum all this up a few pages on, but instead it complicates the picture (1960.186). Perhaps worse, general statements are often followed not with an illustration, but by counterexamples (as in his treatment of pU \*e in proto-Vogul, 1960.175).

The other thing that is lacking in Collinder's work is a clear sense of the reconstructum and its ties to the witnesses in the daughter languages. The entries in his FUV are headed not with an asterisked, reconstructed form, but with one of the forms on which such a reconstruction might be based. It is telling that the form so cited, as it were *primus inter pares*, is most frequently Finnish.

Décsy 1990 is an intriguing document. Unlike Collinder, who in his FUV segregated "Uralic" etymologies (i.e., those with at least one putative Samoyedic pendant, pages 1-69) from "Finno-Ugric" ones (pages 72-127), Décsy does the reverse: he dispenses with any etymology which does not have at least one Samoyedic and one non-Samoyedic member. We thus miss any lessons we might have learned from a comparison of the witnesses to such ancient words as those meaning 'hand', 'ear', 'marrow', 'blood', 'ice', any domesticated animal, and all numerals (Décsy ignores pU 'two', [390] \*käktä, and [138] \*wix=ti 'five/ten'). But he is even more daring: rather than simply to disregard the vocalism of the second syllable, Décsy reduces it to one entity, with no phonologically distinct quality (pages 39-43); since he also dispenses with any quantitative vocalic oppositions in the first syllable (pages 24, 49-51), it will come as no surprise that Décsy's book is not concerned with regularity of correspondences, let alone sound-laws. Unfortunately, it is not concerned with lexical diffusion, either.

Perhaps the main strong point of Décsy's book — and there are many, actually, including his criticism (e.g. page 14) of Fennocentrism in pU reconstruction — is his insistence on the importance of naturalness, both of

the reconstructa and of the changes set up to explain their development in their descendants. He is right, for example, or at least on the right track, in pointing out that \*s > t is far less likely than its reverse (page 19) and to urge the profession, therefore, to set up \*t rather than \*s in reconstructa such as the antecedent of Nganasan t'ii(mi) = Finnish syli = Hungarian öl 'fathom, lap'.

The first great advance in comparative Uralic phonology since Paasonen 1917 came with Janhunen's 1977 *Samojedischer Wortschatz*, a work which presents 650 Samoyedic etymologies with reconstructions. Two years later came Sammallahti's "Über die Laut- und Morphemstruktur der uralischen Grundsprache", a pithy monograph which banned uncertain cognates and focused on, rather than evaded, cruces of comparison. Sammallahti succeeded in uncovering new sound laws and came up with a quantitative coefficient, which he called \*x, to help him to account for otherwise enigmatic length in FU data and glide-phenomena in Samoyedic. A follow-up to this ground-breaking article is Janhunen 1981, an astringent piece which allows a scant 140 Uralic etyma and which may therefore be used as an antidote to the doughty, gouty U[ralisches] E[tymologisches] W[örterbuch] = Rédei 1986-91.

More recently, Sammallahti has fleshed out his earlier reconstructive work (1988). This essay makes great strides in addressing and working out many of the problems which haunt the reconstruction of the core Uralic branches: Permian, Hungarian, and ObUgrian. Its usefulness is greatly enhanced by an eighteen-page appendix of etymologies, marred by only a few typographical errors. On the other hand it takes the prehistory of Lapp, Fennic, Mordvin and Cheremis as settled, programmatically (p. 479), and implicitly, because it is based on Sammallahti's own 1979 reconstructions, as refined in Janhunen 1981. But Janhunen's FU reconstructa (as opposed to his own Samoyedic reconstructions) are essentially inherited through the filter of Itkonen and Collinder, i.e. they are needlessly and probably unrealistically Fennocentric in their phonetic details. For example, Janhunen (and the UEW) reconstruct \*e for the first-syllable vocalism of the pU words for 'nest' and 'water':

L bæsse	---
F pesä	vete-
M pizë	ved'
C pəž=aš	wüt
U puz	vu
Z poz	va
O pel, piil	----
V pit'i	wit
H fész=ek	víz
N p'it'a	jít
Q pitü	üt

Even if the -ii- of southern Ostyak piil is secondary, there is something inherently suspect and self-defeating about setting up any one language (or group of languages) as a ‘key’ which will unlock the mysterious cabinet of complex correspondences evidenced by the languages deemed to be ‘not key’.

Décsy was not the first to be critical of Fennocentric reconstructions. Lehtinen, for example, pointed out (1967) that Fennic long mid vowels occur in bisyllables only to the left of resonants followed by e (hereafter: I-stems; examples are Finnish suone- ‘sinew’, nuole- ‘arrow’, kiele- ‘tongue’, siene- ‘mushroom’; vuote- ‘year’ had \*-δ-, a sound of uncertain phonetic qualities and phonological status but which at all events did not function as an obstruent). This echoed Steinitz 1944.9; but she went on to suggest that this is the case because of a sound-change which had lengthened all short mid vowels in this position prior to a change (\*i > e to the right of labials) which refilled the gap, e.g. \*mine- > mene- ‘goes’, \*vire- > vere- ‘blood’, \*mune- > mone- ‘many’.

The insufficiency of either approach, that of Steinitz or that of Itkonen, to account for the vowels of the Permian languages prompted three major attempts at tackling proto-Permian head-on. These were Lytkin 1964 (with revisions in the introduction to his KESK, 1970), Harms 1967, and Rédei 1968. None can be called completely successful. In part because he does not invoke quantitative distinctions for his proto-Permian, Lytkin sets up too many proto-vowels: seventeen, to account for correspondences among descendant languages with inventories of from six to eight vowels. Harms is linguistically the most sophisticated, but relies too heavily on internal borrowing. The reconstruction by Rédei enjoys the most currency

today, but it has very little predictive or confirmative power. Ganschow's 1979 look at the distribution of Komi oblique stems, an enterprise which might reveal something about the second syllable in proto-Permian, is methodologically flawed and should be undertaken afresh.

As for the reconstruction of proto-Samoyedic vocalism, many details and relative chronologies still need to be worked out, but the basic outline has been clear, *grosso modo*, since Janhunen's SW.

We come now to ObUgrian. The vocalism (but of the first syllable only!) of this pair of languages was made the subject of a monograph by Honti in 1982. What Honti did was this: (1) he determined what the comparanda were in all the highly divergent dialects of Ostyak and Vogul; (2) on the basis of a comparison of those comparanda, he devised reconstructions for proto-Ostyak and proto-Vogul; (3) in order to derive his proto-ObUgrian reconstruction, he split the difference between his pO and pV reconstructions.

Honti's greatest accomplishment in this work is step (1), which he made available to the world as 'Etymologisches Belegmaterial', pages 123-206. These pages contain the phonologically relevant material for 829 Ostyak-Vogul etymologies; the first 724 are provided with asterisked reconstructed forms for Honti's pO and pV as well as his pOU. In step (2) he only partially succeeded, but it is a vital part: he was able to reconstruct a credible proto-Vogul with only two tongue-heights (pages 26-50). This reconstruction is an improvement over that of Steinitz 1955, but it accords ill with Honti's own proto-Ostyak, because this latter commits the same error as that of Steinitz 1950.

**Vowel Rotation.** The error was pinpointed in a short but far-ranging review by Tálos (1984) entitled, in a reference to Honti's third step, '(Osztják + vogul) ÷ 2'; see also Helimski 1985 and, for the broader theoretical picture, Katz 1986-7. As Tálos sees it (pages 91-2), the proto-Ostyak of Steinitz 1950 (and therefore of Honti 1982) cannot be correct because it assumes sound-changes of a type which is the reverse of what we know to occur in languages. Writing in 1982 in Hungary, Tálos was unaware of Donegan's *On the natural phonology of vowels* (1978). It is thus all the more striking that his conception of universals of sound-change, based on work with data in nearly perfect complementary distribution with that cited by Donegan, resembles so closely the 'fortition processes' which she outlined in her Ph.D. dissertation. Many of these processes have been elaborated and tested widely enough to merit the name of 'principles' (Labov 1994). Stated in terms used by Tálos (who wisely avoids the terms 'tense' and 'lax' in preliminary reconstructive work with Uralic), two of these principles are:

1. In unconditioned chain-shifts, long vowels rise.
2. In unconditioned chain-shifts, short vowels fall.

Compare Labov 1994.116; on raising, see Donegan 138-142. In these pages, Donegan shows that one of the functions (or purposes) of raising is the enhancement of chromaticity — chromatic vowels are those that are front, rounded, or both (thus the ü of French lune ‘moon’ or Finnish syy ‘cause’ is ‘bichromatic’). It follows that since the vowel a is achromatic, that is, both [- round] and [- front], it will not be prone to ‘context-free’, spontaneous, raising: it has no colour to enhance. Thus long aa in the English vowel shift did not rise to \*ëë; it rose ‘only after it had acquired a palatal color’ (page 139). Donegan goes on to cite examples from Scots and American dialects, São Miguel Portuguese, and the South Biguden (Cornouaillais) dialect of Breton. Tálos also draws examples from English, but goes on to mention East Permian, Beserman Udmurt, Meadow Mari, Lapp-Fennic-Mordvin, and of course Ostyak. His point is that the Steinitz/Honti approach, which accords the Vakh and Vasjukan dialects of Ostyak the status of ‘key’ languages, forces us to assume that in the neighbouring Surgut dialects there occurred a highly unlikely shift, in a three-tongue-height system, from long mid vowels to short lows, \*ee > \*ä, \*öö > \*œ and \*ää, \*oo > \*o and \*a. Instead, Tálos suggested that proto-Ostyak had a two-tongue-height system, and that the Surgut dialects deviated in that their non-high non-long \*e \*ö \*o fell; in the rest of Ostyak these vowels lengthened — ‘the great Ostyak vowel shift’ (Tálos 1984.93). To schematize, we may simplify Tálos’ elegant table (page 94) to show the development of the [+ front] vowels only (new vowels indicated with ‘!’):

Surgut dialects		other Ostyak	
*ii	*i	*ii	*i
--	*e	*ee!	← *e
	↓		
*ää	*ä!	*ää	--

Later, the high shorts fell in all dialects: cf. principle 2, above. We may contrast the Surgut dialect Tremjukan with Vakh:

Tremjungan		Vakh	
ii	*i	ii	*i
	↓		↓
--	e!	ee	e!

ää	ä	ää
----	---	----

Notice that if we factor out quantity, Tremjungan still has a two-tongue-height system while Vakh has three degrees of aperture for the long vowels and only one for the short:

Tremjungan		Vakh	
ii		ii	
	e	ee	e
ää	ä	ää	

Using Labovian terminology, we may reformulate Tálos' corollary set of 'principles' to (1) and (2) above:

3. *In unconditioned chain-shifts, high vowels shorten.*
4. *In unconditioned chain-shifts, low vowels lengthen.*

Here 'low' may mean 'non-high'; the essential point is that the lower the vowel, the more likely it is to lengthen. Thus pO \*e > Tremjungan ä is natural and expected according to principle (2): short vowels fall; and pO \*e > Vakh ee is natural and expected according to principle (4): low (in this case, the distinctively low \*e as opposed to non-low \*i) vowels lengthen.

Tálos sees the four principles as working together in a never-ending eddy which he calls vowel rotation. We may also imagine it as a never-ending chain. Using iconic symbols to indicate tongue height and length:

$$\text{T} > \perp > \pm > \bar{\text{T}} > \text{T}$$

Vowel rotation, so defined, is a kind of *perpetuum mobile* in that it entails processes which, while antithetical to one another, are nevertheless equally

beneficial for the clearly identifiable quiddity of any given vowel at any given time. To use Donegan's terminology, lowering decreases a vowel's colour but increases its sonority; with raising the opposite is the case: what the vowel loses in sonority it makes up in colour.

The signal methodological weakness of Honti 1982 is its determined disregard for evidence outside ObUgrian; it is as if he were trying to reconstruct ObUgrian internally, and thereby fails to exploit the strengths of the comparative method. In all the chaos of pOU > pO and > pV data exhibited on pages 112-18 there is not a glimmer of order. For example, out of 72 cases of pV \*aa, Honti has it coming from pOU \*oo in 33 cases, and from pOU \*aa in 26; out of 115 cases of pV \*ää, he has it coming from pOU \*ee in 35 cases, and from pOU \*ää in 39. But if one examines Honti's pV \*ää and \*ä in the light of the rest of Uralic, a remarkably clear pattern emerges. Tálos made such an examination, and reports briefly in his review.

The pattern is this: in the great majority of cases, words with pV chromatic long vowels have extra-ObUgrian cognates which descend from proto-Uralic or proto-FU low vowels, while words with pV chromatic short vowels have extra-ObUgrian cognates which descend from proto-Uralic or proto-FU high vowels. Quantity, in other words, has replaced tongue height.

**Method used here; assumptions.** In this little book, I have tried to present the most important Ostyak-Vogul etymologies in two ways simultaneously. On the one hand, *Die Lautgesetze kennen keine Ausnahmen*. Accordingly, the etymologies are classified into sets of Ostyak|Vogul correspondence-types which can be explained in terms of the diachronic principles mentioned above. The presentation of the etymologies broadly follows this classification, e.g. etymologies in which pO and pV both have \*i are grouped and presented together. On the other hand, *chaque mot a son histoire*. Therefore each O|V etymology is also examined from without: the distribution of putative cognates elsewhere in Uralic is reviewed and the validity of the etymology is discussed, when necessary, in terms of the vocalic (and sometimes consonantal or semantic) appropriateness of the comparison. Language-forms cited because of parallel sound or sense development are placed between vertical lines, e.g. Latin |cruus| ([368]).

I start from within ObUgrian; for proto-Ostyak I use the proto-inventory and sequence of events as outlined by Tálos in his 1984 review of Honti 1982 and in his 'Kép szöveg nélkül' (1983), viz.

*i	*ü	*i	*u	*ii	*üü	*ii	*uu
*e	*[ö]	*ë		*ää	*[œœ]	*aa	*[åå]

First (1) pO \*ë coloured to \*o; then, as stated above, (2) the short non-high vowels fell in pre-Surgut dialects, but became long elsewhere, yielding, e.g., Vakh full ee, öö, and oo; and (3) \*[œœ] and \*[åå] became phonemes, yielding a gap-free vowel system of the cubic type.

For proto-Vogul I follow the inventory (but not the origins) given at Honti 1982.26: a vowel system with only two phonological tongue-heights:

*i	*ü	*i	*u	*ii	(*üü)	*ii	*uu
*e		*ë		*ää		*aa	

The status of pV \*üü is marginal; I have written \*ii for it throughout, even where it is clear that there must have been a stage with \*üü (cf. Ganschow 1973).

I agree with Tálos (1984.97) that the differences in the consonantisms of Vogul and Ostyak as well as gross divergences in the implementation of their morphology point to a very old break-up of proto-ObUgrian. In that case the fact that the reconstructed inventories of pO and pV are not merely similar but identical in structure is an indication that the proto-Uralic system could well have been the same, i.e. it was split fairly evenly into long versus short vowels and only two tongue-heights were phonologically opposed.

This conception of a proto-Uralic vowel-system as having only two tongue-heights has struck many Uralists as odd; they protest that it is either an abstraction or a simplification. It is neither. It is not an abstraction because the elimination of phonological mid vowels from our reconstruction shifts the burden of explicitness onto quantity, which must always be a variable in any language, and not only in stress-timed ones. We should remember that tongue-height and the duration of vowel-sounds are connected phenomena (Catford 1977.196-9, with literature): *ceteris paribus*, ‘the more open a vowel is, the longer it is’. It is not a simplification for the simple mathematical reason that it allows us ample phonological leeway in which to plot our reconstructions: we have at our disposal, for example, four types of [+ front] vowel (\*ä, \*ää, \*i, \*ii) in the first syllable co-occurring

with (at least) two types of vowel in the second (high \*I, low \*A), yielding eight proto-Uralic vocalic profiles. This is comparable with the inventories employed by the UEW (Vol. 1, page x), but it is amplified by the combinatorial effects of \*x, and the positions and natures of diverse morpheme boundaries provide further varied ground on which to plot our map of the proto-Uralic lexical terrain.

The following conversion-chart will help to orientate the reader unfamiliar with the two-tongue-height perspective:

three tongue-heights		two tongue-heights
UEW	Sammallahti, Janhunen	
*käte	(= *käti)	= *käti
*pesä	= *pesä	*pääsä
*wete	*witi	= *witi
*nime	*nimi	*niimi
*piδe	*piδi	= *piδi
*piδe (~kä)	*piδkä	*pi(i)δ=kä

The words with long vowels probably often represent innovations: loans ([134] \*niimi ‘name’), and derivations of varying transparency such as \*pi(i)δ=kä (see [57] \*piδi) or even [13] \*päx=sä ‘nest’.

Whenever possible, I have assigned one of eight basic O|V correspondence types to the etymologies presented. The following paragraphs rapidly outline the assumptions about pU > pOU > pO and > pV which underlie the correspondence types.

1. Before the breakup of common ObUgrian or perhaps even earlier, the vocalic quantitative opposition collapsed. Thus there was a nearly complete merger such that \*ii ≠ \*i > \*i, \*ää ≠ \*ä > \*ä, \*ii ≠ \*i > \*i, and so on. This radical upheaval has already been noticed by Sammallahti (1988.500, where the formulation is slightly different because he is operating with three tongue-heights).

1a. After (1.), pO and pV had their respective vocabularies split

1a. After (1.), pO and pV had their respective vocabularies split roughly in two equal halves, one half with high vowels and the other with low vowels. For example, pV had words with front vowels such as \*min- 'goes', \*piδ= 'long, far', \*ips 'taste', and \*ic' 'shadow(soul)' with high \*i (see [2], [57], [132] and [378] in the corpus) and \*käc' 'barbel', \*mälk 'breast', \*näj 'princess; sun', \*n'älm 'tongue', and \*kär 'sterlet' with low \*ä (see [220], [194], [251], [277], [176]).

The following statements apply to chromatic vowels only:

2. In pV, there was rotation of ALL first-syllable low vowels and MANY first-syllable high vowels; in other words, ALL first-syllable low vowels were lengthened, and MANY first-syllable high vowels fell. In pO, both rotation-processes were partial, and under certain conditions which are not yet clear (Tálos: \_\_\_\_/X", 1984.420) some short low vowels were raised, a counter-rotational movement.

2a. The resulting correspondences at this point were as follows (as a purely typographic convention, I shall write \*e for the continuation of pre-ObUgrian \*ä, and \*ë for pre-ObUgrian \*a, without any assumption that raising was involved. The CVC shape attributed to various stages of the prehistory of pO and pV is a gross oversimplification, made in the interests of accuracy rather than precision):

pO	=	pV	O V
*min-		*min-	*i *i
*ic'		*is	*i *i
*piδ=		*peδ=	*i *e
*kic'		*kec'	*i *e
*eps		*et	*e *e
*meyl		*määyl	*e *ää
*näaj		*näaj	*ää *ää
*n'äalm		*n'äalm	*ää *ää
*käär		*käär	*ää *ää

3. After (2.) the long low vowels in MANY words rotated (= rose) in pV; an identical rotation occurred in pO, but its diffusion in the lexicon was not as extensive. In addition, the short high vowels in SOME words in pO were lengthened (a counter-rotational change) under conditions which are not yet

3a. The correspondences of our lexical sets now looked like this:

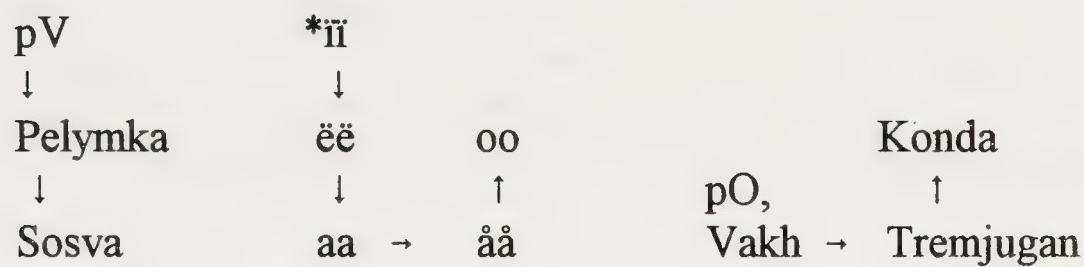
pO	=	pV	O V	type
*min-		*min	*i *i	1 <sub>T</sub>
*piδ=		*peδ=	*i *e	2 <sub>T</sub>
*kic'		*kääc'	*i *ää	X"
*epł		*et	*e *e	3 <sub>L</sub>
*iis		*is	*ii *i	8 <sub>T</sub>
*meyl		*määyl	*e *ää	4 <sub>L</sub>
*nääj		*nääj	*ää *ää	5 <sub>L</sub>
*n'äälm		*n'iilm	*ää *ii	6 <sub>T</sub>
*kiir		*kiir	*ii *ii	7 <sub>T</sub>

In the example of \*ic' > pO \*iis, pV \*is ‘shadow(-soul)’ shown here, the correspondence-type 8<sub>T</sub> was arrived at by conditioned lengthening in the Ostyak pendant. An examination of the corpus reveals that some instances of this correspondence type arose in an opposite fashion, namely via conditioned shortening in pV, from correspondence-type 7<sub>T</sub>. For an example see [415] \*s'arta ‘young (rein)deer’.

4. Achromatic vowels behaved somewhat differently, as predicted by Donegan and described by Tálos. For example, not only short \*i but also long \*ii tended to fall in both pO and pV. That achromatic lowering operated independently of the lowering of the chromatic vowels is proven by the fact that \*i > \*ë and \*ii > \*ëë occurred earlier and more extensively in pO than in pV, i.e. the distribution is the reverse of that seen in the chromatic vowels. Thus we have correspondences such as pO \*aa = pV \*ii, with reflexes as follows:

	Vakh	Tremjugan	Konda
pO *aa >	aa	åå	oo
pV *ii >	ëë	aa	
	Pelymka	Sosva	
(a c h r o m a t i c s   f a l l),			
	(then   c o l o u r   and   r i s e)		

with the Ostyak reflexes one step ahead in the rotation, first on the way down (pO already had \*aa) and then — because they are being pushed? — on the way up: \*aa first acquires colour (> åå in Tremjugan) and then begins to rise (> oo in Konda Ostyak). The Vogul reflexes show the beginning of the same chain, with ëë in western dialects (Pelymka) falling to the aa attested in Sosva. Schematically:



Further discussion may be found *s.vv.* An enviably clear presentation of the history of Uralic diachronic vowel theories is Hajdú 1992.175-192.

#### *Apparatus, abbreviations, symbols, sources*

0. In the interests of perspicuity, the comparative data is presented telegrammatically in blocks of two (or three, as space requires) lines. The data-fields in the *first* one or two lines are, from left to right: (1) the running number of the etymology, in square brackets. (2) the asterisked, reconstructed form. (3) the gloss or glosses. Glosses enclosed within brackets are

even more approximate than usual, thus '(tree-fungus)' is to be understood as 'a kind of tree-fungus'. (4) reflexes in Ostyak (Tremjugan unless otherwise noted) and Vogul (Sosva unless otherwise noted). The Ostyak and Vogul reflexes are separated by a vertical line (|). (5) the asterisked reconstructed vowel set up for pre-Ostyak and pre-Vogul, again separated by a vertical line; (6) the correspondence type (1<sub>T</sub>, 2<sub>T</sub><sup>1</sup>, 3<sub>T</sub><sup>1</sup>, etc.; see above). The *last* line consists of two major parts: the distribution bar (set in bold) and the chief sources for the etymology.

The distribution bar is a roster of witnesses to the etymology. In the interests of synopticity, the full range of Uralic languages has been compressed to thirteen slots, and a core group (Udmurt, Zyrian, Ostyak, Vogul, and Hungarian) has been set off graphically by the use of backward and forward slashes, thus:

**LFMC\UZOVH/TNQM**

To the left of the backslash, M stands for Mordvin; to the right of the forward-leaning slash, M stands for Mator. If a reflex is attested in Estonian but not in Finnish proper, E is used to the left of the backslash to refer to Estonian. Similarly if a reflex is attested in Enets but not in Nenets, E is used to the right of the forward-leaning slash to refer to Enets. Lower case indicates considerable doubt concerning the reliability of a given witness; the hyphen signals silence. For example, the distribution bar

**L-M-\UZOV-/ -eQ-**

indicates that the etymon in question has certain reflexes in Lappish, Mordvin, Udmurt, Zyrian, Ostyak, Vogul, and Selqup, as well as a doubtful pendant in Enets. For language abbreviations see the next section.

1. Languages and language-nodes (used in referring to languages and language groups, and in citing language-forms; followed by space):

U	<b>Uralic</b>
FU	<b>Finno-Ugrian</b>
S	<b>Samoyedic</b>
P	<b>Permian</b>
OU	<b>ObUgrian</b>
L	<b>Lappish (Saam)</b>
F	<b>Fennic (= Baltic-Finnic; Finnish unless otherwise specified)</b>

E	<b>Estonian</b>
M	<b>Mordva</b> (to the left of the backslash); Erzya unless otherwise noted; Mm = Moksha Mordva
C	<b>Cheremis</b> (= Mari)
U	<b>Udmurt</b> (= Votyak)
Z	<b>Zyrian</b> (= Komi); Ze = Eastern Permian = Jaz'va Komi (OP)
O	<b>Ostyak</b> (= Khanty)
V	<b>Vogul</b> (= Mansi)
H	<b>Hungarian</b> (= Magyar)
T	<b>Tavgi</b> (= Nganasan)
N	<b>Nenets</b> (Tundra and Forest) and its close congener, Enets. N = Tundra N unless otherwise specified
Q	<b>Selqup</b> and its extinct close congener, Kamassian. Q = Taz Selqup unless otherwise specified
M	<b>Mator</b> (to the right of the forward-leaning slash)

*Nota Bene:*

-E--\	<b>Estonian</b>
/-E--	<b>Enets</b>

**Dialects of Ostyak:**

DN, DT = upper Demyanka	Ni = Nizyam
J = Jugan	Trj = Tremjugan
Kaz = Kazym	V = Vakh
Ko = Konda	Vj = Vasjugan

**Dialects of Vogul ('OV' = 'Old [south] Vogul' forms cited by Honti 1982 from J. Gulya Ms.):**

KU = Lower Konda	So = Sosva
LO = Upper Lozva	TJ(C) = Tavda
LU = Lower Lozva	VN = North Vagiljsk
N = North	
P = Pelymka	

2. Books and mss. (followed, without intervening space, by page number; the same letters in minuscule indicate that the source does not claim cognateness in the etymology under discussion).

C	= Collinder 1955. Number = page number.
D	= Steinitz 1966-93. Number = column number.
EWU	= Benkő <i>et al.</i> 1993-5.
FgrKons	= Steinitz 1952.
H	= Honti 1982. Number = Honti number.
J	= Janhunen 1977. Number = page number.
K	= Keresztes 1986. Number = page number
KESK	= Lytkin 1970.
KS	= Kortt and Simčenko 1985. Number = page number.
KT	= Karjalainen-Toivonen 1948. Number = page number and column.
MK	= Munkácsi-Kálmán 1986. Number = page number and column.
P	= Pokorny 1959. Number = page number.
RA	= field notes and papers of Robert Austerlitz
SKES	= Toivonen <i>et al.</i> 1955-81.
TESz	= Benkő <i>et al.</i> 1967-84.
U	= Rédei 1986-1991. Number = page number.
WSFU	= Steinitz 1944.
WSO	= Steinitz 1950.
WSV	= Steinitz 1955.
WUK	= Wichmann-Uotila-Korhonen 1987. Number = page number and column.

3. Reconstructed segments and morpheme boundaries:

*\$	either *s or *š
*{	pOU reflex of earlier *\$
*£	either *s or *s'
*x	Sammallahti's (1979) coéfficient quantitatif: see above
V	any vowel
⊥	any short low vowel

T	any short high vowel
ꝝ	any long high vowel
ꝑ	any long low vowel
=	derivational suffix to the right
-	inflectional suffix to the right
+	members of a compound to left and right
&	members of a reduplicative compound to left and right

## Bibliography

- Abondolo, D., 1990: 'Proto-Uralic without s-Laute: a distributional view', pp. 80-5 in L. Jakab, L. Keresztes, A. Kiss and S. Maticák (eds.), *Congressus septimus feno-ugristarum, Debrecen 27.viii.-2.ix 1990. Sectiones sectionum. Dissertationes: Linguistica*, Debrecen.
- , 1992: 'Locus meliori datus: Hungarian hegys, hős, ős, tőgy, völgy, vas, hagy, hely', pages 23-8 in: Deréky et al., 1992.
- , [forthcoming]: 'Nasals and nasal prosodies in preproto-Uralic', article to appear in proceedings of the 1989 Hamburg Viertes internationales Symposion 'Uralische Phonologie', ed. W. Veenker. Submitted 1989.
- Benkő, L., (ed.), 1967-84: *A magyar nyelv történeti-etimológiai szótára*, Budapest: Akadémiai kiadó.
- , 1993-5: *Etymologisches Wörterbuch des Ungarischen*, Budapest: Akadémiai kiadó.
- Bereczki, G., 1968: 'W. Steinitz és E. Itkonen finnugor vokalizmuselmélete és a cseremisz nyelv', *Nyelvtudományi Közlemények* 70.23-34. {= 1969. 'Die finnisch-ugrische Vokalismustheorie von W. Steinitz und E. Itkonen und das Tscheremissische,' *Acta Linguistica Academiae Scientiarum Hungaricae* 19.305-319}
- , 1971: 'Zu den Thesen und Antithesen in der finnisch-ugrischen Vokalforschung', *Ural-Altaische Jahrbücher* 43.18-27.
- Bergsland, Knut, 1986: 'Comparative Eskimo-Aleut phonology and lexicon', *Journal de la Société Finno-Ougrienne* 80.63-75.
- Buck, C.D., 1949: *A dictionary of selected synonyms in the principal Indo-European languages. A contribution to the history of ideas*, Chicago: University of Chicago Press.

- Catford, J.C., 1977: *Fundamental problems in phonetics*, Bloomington: Indiana University Press.
- Collinder, Björn, 1955: *Fenno-Ugric vocabulary. An etymological dictionary of the Uralic languages*, Stockholm: Almqvist & Wiksell.
- , 1960: *Comparative grammar of the Uralic languages*, Stockholm: Almqvist & Wiksell.
- Décsy, Gyula, 1990: *The Uralic Protolanguage: a comprehensive reconstruction*, Bloomington: Eurolingua.
- Deréky, P., M. Bakró-Nagy, T. Riese, and P. Hajdú, (eds.), 1992: *Festschrift für Károly Rédei zum 60. Geburtstag/Emlékkönyv Rédei Károly 60. születésnapjára, Studia uralica 6.: Urálisztikai tanulmányok 3. Linguistica: Series A. Studia et dissertationes*, 8., Wien - Budapest.
- Donegan, P., 1978: *On the natural phonology of vowels*. 1978 Ohio State PhD diss., published 1985 in the series *Outstanding Dissertations in Linguistics*, ed. Jorge Hankamer, New York and London: Garland Publishing.
- Emout, A., and A. Meillet, 1985: *Dictionnaire étymologique de la langue latine. Histoire des mots*, Paris: Klinksieck.
- Flint, A., 1980: *Semantic structure in the Finnish lexicon: verbs of possibility and sufficiency*, Helsinki: Suomalaisen kirjallisuuden seura.
- Ganschow, G., 1973: ‘Zeugnis obugrischer vorderer Labialvokale im Wogulischen’, *Études finno-ougriennes* 10.121-8.
- , 1979. ‘A zürjén j-tövek történetének kérdései’, *Nyelvtudományi Közlemények* 81/1.57-69.
- Genetz, A., 1896: *Ensi tavuun vokaalit suomen, lapin ja mordvan kaksi- ja useampitavuisissa sanoissa, Suomi III* 13.3. Helsinki.
- Gombocz, Z., 1909: ‘A magyar a-hangok történetéhez’, *Nyelvtudományi Közlemények* 39.
- Gulya, J., 1975, ‘Gab es eine finnisch-ugrische Einheit?’, pp. 87-92 in P. Ariste *et al.*, ed., *Congressus tertius internationalis fennougristarum Tallinnae habitus 17.—23. VIII 1970, Pars I: Acta Linguistica*, Tallinn: Valgus.
- , 1966: *Eastern Ostyak Chrestomathy*, Indiana University Publications, Uralic and Altaic Series, ed. Th. A. Sebeok, Vol. 51.
- Hajdú, Péter, 1992: *Introduzione alle lingue uraliche*, translated and adapted by Danilo Gheno, Torino: Rosenberg & Seiler.
- Harms, R.T., 1967: ‘Split, shift and merger in the Permic vowels’, *Ural-Altaische Jahrbücher* 39.163-198.
- Helimski, E., 1976: ‘O sootvetstviäx uraljskix a- i e-osnov v tazovskom dialekte seljkupskogo äzyka’, *Sovetskoe Finno-Ugrovedenie* (now:

- Linguistica Uralica*) 12.113-132.
- , 1984: ‘Problems of phonological reconstruction in modern Uralic linguistics’, *Sovetskoe Finno-Ugrovedenie* (now: *Linguistica Uralica*) 20. 241-57.
- , 1985: (Review of Honti 1982.) *Sovetskoe Finno-Ugrovedenie* (now: *Linguistica Uralica*) 21.63-76.
- Honti, L., 1982: *Geschichte des obugrischen Vokalismus der ersten Silbe*, *Bibliotheca Uralica* 6, ed. P. Hajdú, Budapest: Akadémiai kiadó.
- , 1985: ‘Ősmagyar hangtörténeti talányok. Ugor hangtörténeti és etimológiai jegyzetek’, *Magyar Nyelv* 81.140-55.
- Itkonen, E., 1939: *Der ostlappische Vokalismus vom qualitativen Standpunkt aus mit besonderer Berücksichtigung des Inari- und Skolt-lappischen*. *Mémoires de la Société Finno-Ougrienne* 79. Helsinki: Suomalais-Ugrilainen Seura.
- , 1946: ‘Zur Frage nach der Entwicklung des Vokalismus der ersten Silbe in den finnisch-ugrischen Sprachen, insbesondere im Mordwinischen’, *Finnisch-Ugrische Forschungen* 29.222-337.
- , 1954: ‘Zur Geschichte des Vokalismus der ersten Silbe im Tschermisischen und in den permischen Sprachen’, *Finnisch-Ugrische Forschungen* 31.149-345.
- Janhunen, J., 1977: *Samojedischer Wortschatz. Gemeinsamojedische Etymologien*. *Castrenianumin toimitteita* 17, Helsinki.
- , 1981: ‘Uralilaisen kantakielen sanastosta’, *Journal de la Société Finno-Ougrienne* 77:9.219-74.
- , 1992: ‘Petrified verbal nouns in early Uralic’, pages 239-44 in Deréky et al. 1992.
- Kálmán, B., 1965: ‘A magyar mássalhangzó-rendszer kialakulása’, *Magyar Nyelv* LXI, 285-398.
- Katz, H., 1987: ‘Zur Phonologie des Motorisch-Karagassisch-Taigischen’, pages 336-48 in Rédei 1987.
- , 1987-8: (Review of Honti 1982.) *Néprajz és Nyelvtudomány*, *Acta Universitatis Szegediensis de Attila József nominatae*, Vols. 31-32, pages 251-61.
- Keresztes, L., 1986: *Geschichte des mordwinischen Konsonantismus II. Etymologisches Belegmaterial*, *Studia uralo-altaica*, edited by P. Hajdú, T. Mikola, and A. Róna-Tas, vol. 26, Szeged.
- , 1987: *Geschichte des mordwinischen Konsonantismus I*. Szeged. *Studia uralo-altaica*, edited by P Hajdú, T. Mikola, and A. Róna-Tas. vol. 27, Szeged.
- Koponen, Eino, 1991: ‘Itämerensuomen marjannimistön kehityksen päälinjoja ja kantasuomen historiallista dialektologiaa’, *Journal de la*

- Société Finno-Ougrienne* 83.123-161.
- Korenych, É., 1972. *Iranische Lehnwörter in den obugrischen Sprachen*, Budapest: Akadémiai kiadó.
- Korhonen, M., 1981: *Johdatus lapin kielen historiaan*, Helsinki: Suomalaisen Kirjallisuuden Seura.
- Kortt, I.R., and Ju. B. Simčenko, 1985: *Wörterverzeichnis der Nganasanischen Sprache*, Part 1: *Nganasan-Deutsch-Russisches Glossar*, Berlin. {= *Systemata mundi: Institut zur Erforschung fremder Denksysteme und Organisationsformen. Materialien*, Vol. 1.}
- Kuznecova, A. I., 1980: 'Leksika i semantika', Chapter (pages 12-117) in *Očerki po seljkupskomu äzyku*, edited by A.I. Kuznecova, E. A. Xelimskij, and E.V. Gruškina. Moscow: Izdatlejstvo Moskovskogo Universiteta.
- Labov, W., 1994: *Principles of linguistic change. Volume 1: Internal factors*. Oxford, UK & Cambridge, Mass.: Blackwell's.
- Lehtinen, M., 1967: 'On the origin of the Balto-Finnic long vowels', *Ural-Altaische Jahrbücher* 39.147-152.
- Lehtiranta, J., 1989: *Yhteissaamelainen sanasto. Mémoires de la Société Finno-Ougrienne* 200, Helsinki: Suomalais-Ugrilainen Seura.
- Lehtisalo, T., 1933: 'Zur Geschichte des Vokalismus der ersten Silbe im Uralischen vom qualitativen Standpunkt aus', *Finnisch-Ugrische Forschungen* 21.
- Ligeti, L., 1986: *A magyar nyelv török kapcsolatai a honfoglalás előtt és az Árpád-korban*, Budapest: Akadémiai kiadó.
- Lytkin, V.I., 1961: *Komi-äzjvinskij dialekt*, Moscow: Izdateljstvo akademii nauk.
- , 1964: *Istoričeskij vokalizm permskix äzykov*. Moscow: Nauka.
- , and V. I. Guläev, 1970: *Kratkij etimologičeskij slovarj komi äzyka*, Moscow: Nauka.
- Martin, S. E., 1987: *The Japanese language through time*, New Haven: Yale University Press.
- Matisoff, J., 1978: *Variational semantics in Tibeto-Burman. The "organic" approach to linguistic comparison*, Philadelphia: Institute for the Study of Human Issues: {= Occasional Papers of the Wolfenden Society on Tibeto-Burman Linguistics, Volume 6. Editor: F.K. Lehman}
- Mihalic, F., 1983: *The Jacaranda dictionary and grammar of Melanesian pidgin*. Hong Kong.
- Mikola, T., 1975: *Die alten Postpositionen des Nenzischen (Juraksamoje-dischen)*, Budapest: Akadémiai kiadó.
- Munkácsi, B., 1885: *A magyar-ugor szótár. Magánhangzók: hangrend*,

- hangszín. Magyar Nyelvőr* 14.
- , 1895: ‘A magyar magánhangzók történetéhez’, *Nyelvtudományi Közlemények* 25.
- , 1986: *Wogulisches Wörterbuch*, edited by B. Kálmán, Budapest: Akadémiai Kiadó.
- Paasonen, H., 1912-1917: *Beiträge zur finnischugrisch-samojedischen Lautgeschichte*, {= vols. XIII-XVII of *Keleti Szemle (Revue Orientale)*, Budapest}.
- , 1990-: *Mordwinisches Wörterbuch*, compiled by K. Heikkilä with the assistance of H.-H. Bartens, A. Feoktistow and G. Jermuschkin. Edited by M. Kahla, Helsinki: Suomalais-Ugrilainen Seura. {Three vols. as of 1995}
- Pokorny, J., 1959, *Indogermanisches etymologisches Wörterbuch*, Bern – München.
- Rédei, K., 1968: ‘A perm nyelvek első szótági magánhangzóinak a történetéhez’, *Nyelvtudományi Közlemények* 70.35-45. {= 1969, ‘Neue Aspekte zur permischen Vokalforschung’, *Ural-Altaische Jahrbücher* 41.130-41.}
- , 1988: ‘Geschichte der permischen Sprachen’, Chapter in Sinor 1988, pp. 351-94.
- , ed., 1986-1991: *Uralisches Etymologisches Wörterbuch*, with the assistance of M. Bakró-Nagy, S. Csúcs, I. Erdélyi, L. Honti, É. Korenchy, É. Sal and E. Vértes, Budapest: Akadémiai kiadó. {Three volumes.}
- , ed., 1987: *Studien zur Phonologie und Morphonologie der uralischen Sprachen, Akten der dritten Tagung für uralische Phonologie, Eisenstadt, 28. Juni - 1. Juli 1984*, Wien: Verband der wissenschaftlichen Gesellschaften Österreichs {= *Studia uralica* 4.}
- Sammallahti, P., 1979: ‘Über die Laut- und Morphemstruktur der uralischen Grundsprache’, *Finnisch-Ugrische Forschungen* XLIII 22-66.
- , 1988: ‘Historical phonology of the Uralic languages, with special reference to Samoyed, Ugric, and Permic’, Chapter in Sinor 1988, pp. 478-554.
- Schiefer, E., 1980: *Ablautähnliche Erscheinungen im Obugrischen. I. Der Imperativ in den ostjakischen Dialekten Vack und Vasjugan*. München, Veröffentlichungen des Finnisch-Ugrischen Seminars an der Universität München, vol. 6, ed. G. Ganschow. Series B: *Beiträge zur Erforschung der obugrischen Sprachen*.
- Setälä, E.N., 1896: ‘Über Quantitätswechsel im Finnisch-ugrischen’, *Journal de la Société Finno-Ougrienne* 14.3.
- Sherwood, P., [forthcoming]: ‘Fire and water, heat and cold: some linguistic

- reflections on the Ob-Ugrian languages', to appear in 1997 in a Festschrift for Professor Michal Łesiów, Lublin.
- Steinitz, W., 1944: *Geschichte des finnisch-ugrischen Vokalismus; Acta Instituti Hungarici Universitatis Holmiensis*, ed. J. Lotz. Series B. Linguistica. Vol. 2., Stockholm.
- , 1950: *Geschichte des ostjakischen Vokalismus*, Berlin.
- , 1955: *Geschichte des vogulischen Vokalismus*. Berlin.
- , 1961-93: *Dialektologisches und etymologisches Wörterbuch der ostjakischen Sprache*, Berlin.
- Szij, E., 1984: 'Terminy rodstva v obšem slovnom zapase uraljskix äzykov', *Nyelvtudományi Közlemények* 87/2.431-437.
- Tálos, E., 1983: 'Kép szöveg nélkül', pp. 409-20 in *Urálisztikai tanulmányok (Hajdú Péter 60. születésnapja tiszteletére)*, edited by G. Bereczki G. and P. Domokos, Budapest.
- , 1984: '(Vogul + Osztják) ÷ 2', (Review of Honti 1982.) *Nyelvtudományi Közlemények* 86/1, 89-99.
- , 1987: 'On the vowels of proto-Uralic', pp. 70-80 in Rédei 1987.
- , 1993: 'Máskép(p). (Kép szöveg nélkül II.)', pp. 391-4 in *Hajdú Péter 70 éves*, edited by M. Sz. Bakró-Nagy and E. Szij. Budapest: MTA Nyelvtudományi Intézet. {= *Linguistica series A: studia et dissertationes* 15}
- Tepläsina, T.I., 1978: 'Tipologičeskaja èvoluciä struktury prafinno-ugorskogo kornä v permskix äzykax', Chapter (pages 266-325) in *Istoriko-tipologičeskie issledovaniä po finno-ugorskim äzykam*, ed. B. A. Serebrennikov, Moscow: Nauka.
- Wiklund, K.B., 1896: *Entwurf einer urlappischen Lautlehre. I*, Helsinki.

## Etymological material

1. Correspondence type 1<sub>T</sub> : pO short high vowel = pV short high vowel.

1.1 \*i | \*i

Ten stems with this correspondence go back to pU \*i-i; of these, five are attested beyond the core.

[1] \*pili- 'fears'

> pel-   pil-	*i   *i	1 <sub>T</sub>
LFM-\UZOVH/TNQM	H509 U370 J124.	

This stem occurs only with velar derivational suffixes in F.

[2] \*mini- 'goes'

> men-   min-	*i   *i	1 <sub>T</sub>
LF-C\UZOVH/TNQM	H392 U272 J94.	

E has -i-. Cf. UEW268 \*mänV- 'escapes' and Steinitz 1944.29 fn.

[3] \*wi(γ)ri, \*wir&wi 'blood'

> wer   wiγr	*i   *i	1 <sub>T</sub>
LFMC\UZOVH/----	H704 U507.	

The -γ- in the Vogul and the é of Hungarian vér are probably reflexes of an earlier \*w = \*γ; as an antecedent to the H and V forms, we may reconstruct a reduplicated form \*wir&wi. The resemblance of this etymon to one of the Uralic words for 'water', \*witi, is probably not fortuitous; cf. Albanian |gjak| 'blood' < (\*) 'juice', Sakhalin Nivkh |cox| 'blood', |ca᷑x| 'water' (RA).

[4] \*ipi= 'owl'

> jepēγ   jipiγ	*i   *i	1 <sub>T</sub>
LF--\--ov-/----	H200 U98	

The vowels are unexceptionable, but the etymology is not particularly helpful because of the likelihood of onomatopoeia and affect.

## [5] \*ki(n)či- 'seeks'

> kenč-   kins-	*i   *i	1 <sub>T</sub>
---c\UZOV-/----	H284 U145	

This root may be related via high/low ablaut to [53] \*kääčä 'circle, ring'. If so, we would have a meaning-axis parallel to that of French *chercher* < Latin CIRCARE.

## [6] \*n'iri 'twig; supple'

> n'er   n'ir	*i   *i	1 <sub>T</sub>
---c\UZOVH/t <sub>nqm</sub>	H470 U331 j112	

This word may have had \*i. In an appended remark, the UEW (Vol III, page 9) notes that the -ry- of C nörγë straddles a morpheme boundary.

## [7] \*šilki- 'flies'

> leγēl-   tiγl-	*i   *i	1 <sub>T</sub>
----\zov-/----	H131 U500.	

## [8] \*milV= 'deep'

> mel   mil	*i   *i	1 <sub>T</sub>
----\--ovH/----	H389 U870	

## [9] \*tipV- 'gets lost'

> tep-   tip-	*i   *i	1 <sub>T</sub>
----\--ovH/----	H642 U894	

## [10] \*n'irV- 'tears'

> n'er-   KM n'er=ëmt-	*i   *i	1 <sub>T</sub>
----\--ovH/----	H471 (U875 *ä).	

There is one trisyllabic stem:

## [11] \*pimsi=mi 'lip'

> peläm   pit'mi	*i   *i	1 <sub>T</sub>
L---\--ov-/tnqm	H487 U383 j122	

Presumably derived, thought the root is not known. The place of articulation of the first nasal in this stem is unclear; the indeterminacy of the nasal may have something to do with the putative morpheme boundary to its right. The order of the segments \*-ms- is suggested by the reflexes in Lapp (cf. L861; also Korhonen 1981.187-8); ObUgrian innovated the liminal+coronal > coronal+liminal metathesis.

In two stems, the OU correspondence  $*i | *i$  seems to descend from an earlier low vowel:

[12]  $*s'äkä$  '(fish; burbot?)'

> seγ   siγ	$*i   *i$	1 <sub>T</sub>
-FMC\--ov-/----	H572 U 469	.

The C pendants KB ši, B M šij would allow of a high-grade variant of this word.

[13]  $*päx=sä$  'nest'

> VVj pel   LO pit'i	$*i   *i$	1 <sub>T</sub>
LFMC\UZOVH/TNQM	H484 (U375 *e) J126	

Perhaps derived from  $*pVxV$  (?  $*päxi$ ; see UEW410  $*puwe$ ) 'tree'. The morpheme boundary would then be connected with the long  $*ii$  implied by the Irtyš Ostyak piil; or this dialect form may preserve the original state of affairs, in which case secondary shortening occurred not only in Vogul but widely in Ostyak as well. Compare [388]  $*s'äpä$  'neck' 8<sub>TT</sub>. See also [391]  $*jVxV$  'tree; conifer'.

[14]  $*ää's'kä-$  'lands/drops, falls'

> äsēl- (V!)   is-	$*i   *i$	1 <sub>T</sub>
----\UZOVH/---q-	H67 (U71 *e)	

Highly problematic is the following stem:

[15]  $*s'üδ$  V=mV 'heart'

> sem   sim	$*i   *i$	1 <sub>T</sub>
LFMC\UZOVH/TNQM	H593 U477 j139	

The OU reflexes are evidence of an earlier  $*i$ , not  $*ü$ . Contrast [58]  $*küntV$  'fog etc.' The S pendants reflect  $*s'äδ'ä-$  (Janhunen 1981.258-259). Lability with regard to the labiality of pU  $*ü$  should not trouble us overly, however; and we may reckon, as often, with high/low ablaut in the case of a body-part designation. The deviation  $*δ/*δ'$  is not unique, and it is irritating.

The following stem had ablaut of some kind (?  $*i~*e$ ,  $*ää~*ii$ ) probably already in pFU:

[16]  $*n(')ääl(')ä$  'four'

> n'eLë   n'ilä; naliman 'forty'	$*i~*ii   *i~*e$
LFMC\UZOVH/----	H460 (U315 *e)

Hungarian négy 'four', nëgyed 'quarter' and negyven 'forty' all reflect a pFU \*ää: Tálos 1983.419. The Ostyak forms (cf. Nizyam n'itë 'four' < pO \*ii, n'at-a 'into four parts' < pO \*i) can equally be derived from an earlier \*ää, but the Vogul ablaut seems more akin to pFU \*i. The P reflexes can come from either grade.

## 1.2 \*ī | \*ī

- This correspondence goes back to pre-OU \*ī in seven stems:

## [17] \*kil'i= 'Schuppe'

> VVj kal'i   xal'p	*ī   *ī	1 <sub>T</sub>
-F---\uzovh/----	H265 (U121 *a).	

pU \*kal'wV would give H \*he/élyeg, not hályog (Abondolo 1992).

## [18] \*pij=ka 'son'

> pay   piy	*ī   *i < *ī	1 <sub>T</sub>
-Fmc\UZOVH/----	H796 (U390 *o)	

pV shows fronting: \*i < \*ī, presumably conditioned by the \*j; but cf. the pO development of [20] \*mixi. If H fi(ú) 'son' and faj 'genus' descend from the same stem, we may have to reckon with different vocalisms, or even different morphemes, in the second syllable: \*pijii ~ \*pija/\*pij=ka.

## [19] \*wili= 'cuts'

> walt-   wolt-	*ī   *ī	1 <sub>T</sub>
LF--\UZOV-/----	H684 (U579 *o, *oo).	

L uo = UZ ë < \*ī; cf. [351], [353], [357], [364].

## [20] \*wil'V= 'shines'

> Kaz wol'i-   wol'γ-	*ī~*u   *ī	1 <sub>T</sub>
-Fm-\UZovh/----	H687 (U555 *a).	

The Ostyak dialect correspondences point to \*ī~\*u in pO.

## [21] \*mixi 'earth'

> mey   maa, P mëe	*ī < *ī   *īī < *ī	< 1 <sub>T</sub>
-Fmc\UZOV-/----	H775 (U263 *maye)	

This etymology presents two difficulties on the ObUgrian side. The length of pV iī is presumably secondary, due to loss of medial \*-x- and

subsequent contraction. We must also reckon with a shift, to the left of \*γ, in pO from back to front vocalism as in Vj čey = Ob suw- 'goes sour', as pointed out at UEW263.

The S forms (see SW85: pS \*m@jå) belong rather with western \*muδ'a, UEW705.

[22] \*čima= 'straight'

> čamē   soma	*i   *i	1 <sub>T</sub>
-F---\--ov-/----	H100 (U52 *a) SKES53ab	

[23] \*\$iγa 'branch'

> laγ <sup>w</sup> i   tow	*i   *i	1 <sub>T</sub>
-----\--ovh/----	H121 (U843 *tanjV)	

As the UEW indicates, H ág 'bough' could also come from the antecedent of F hanka 'Hängehaken; oarlock' (UEW496 \*šan̥ka).

At least two stems with the correspondence \*i | \*i seem to have had \*u in the first syllable in pre-OU:

[24] \*s'ura= 'narrows'

> Ko sar=t   sori	*i   *i	1 <sub>T</sub>
-----\uzovh/----	H601 U487	

[25] \*puδa=s'V 'pudas'

> pasēl   posal	*i   *i	1 <sub>T</sub>
1f---\--ov-/----	H547 U400.	

The ObUgrian forms presuppose a metathesis. The western forms show difficulties. The consonantisms of the L reflexes are not very reassuring. Perhaps F < L \*pukčasi (U401), a word unconnected with the ObUgrian forms cited here.

A possible third stem with \*u in pre-OU is the following, whose difficulties (WSFU23) are lessened if we take the illability of the pV \*i as primary and posit that the labial reflex in pO is due to a \*u or \*w, perhaps a detransitivizing morpheme, in the second syllable:

[26] \*sula- 'melts'

> lol(a)-   tol-	*i > *u   *i	1 <sub>T</sub>
-FMC\uzovh/----	H140 U450	

The -v- of H olvad- cannot be a continuation of such labiality; it may represent a suffix such as \*=k. Compare [106] \*luki- 'counts'.

pO shows ablaut \*i~\*ë (or \*ë~\*i?) in the following:

[27] \*n'axli- 'licks'

> n'al-   n'ola=nt-	*i~*ë   *i	1A <sub>T</sub> ?
LFMC\UZOVH/TNQ-	H458 (U321 *o[o],) J105	

[28] \*wiča= 'scrapes'

> J wač=ëγ-   os=γ-	*i~*ë   *i	1A <sub>T</sub> ?
----\UZOVH/----	H658 (U549 *wačV-)	

[29] \*s'uδ'a 'hoarfrost'

> soj   sol'	*i~*ë   *i	1A <sub>T</sub> ?
L---\--ov-/----	H562 U488	

[30] \*c'uri= 'flows/drips'

> DN t'arë-   s'urγ-	*i~*ë   *i	1A <sub>T</sub> ?
-f--\--ovH/-nq-	H87 (U40 *o) j79	

In the following stem, pFU definitely had \*a; cf. my paper (1992) in the Rédei Festschrift:

[31] \*wac'V= '(pole)'

> wasë   TČ ošaa	*i   *i	1 <sub>T</sub>
L---c\--ovH/----	H721 U547.	

1.3 \*u | \*u

[32] \*puša- 'sprays, ?blows'

> pol-   LU putaas-	*u   *u	1 <sub>T</sub>
1f--\--zov-/--q-	H486 U409.	

The ObUgrian forms may be derivatives of the next stem.

## [33] \*puwi- 'blows'

> poγ-   puw-	*u   *u	1 <sub>T</sub>
--MC\--OVH/TNQM	H495 U411	

Contrast the secondary lengthening, in pO, of [400] \*puwi 'rear'.

## [34] \*līxu 'bone'

> loγ   luw	*u   *u <*uu < *u < *i	< 1 <sub>T</sub>
-FMC\UZOVH/TNQM	H352 U254 J82	

We may posit a \*u in the second syllable (or \*līxi=w?) in order to account for the labial outcomes in pO and pV. For the lengthening \*u > \*uu in pre-pV, cf. the next stem [35]. This secondarily lengthened vowel was then shortened again in second position in compounds. Initial pU \*l- is noteworthy and perhaps connected with compound-second position.

## [35] \*tīxu 'lake'

> toγ   TJC t:o	*u   *uu < *u < *i	< 1 <sub>T</sub>
----\UZOVH/TNQM	H620 U532-3	

The attestation of this stem in Vogul is restricted to an ambiguous southern reflex. Steinitz (WSFU22,24) was correct in suspecting that pV \*uu here might be secondary and that its cause might be what we now know as \*x. See also [75] \*tīxu=ka 'spring'. If F suo belongs here it is because of a shift \*t- > \*s- in certain precise environments (e.g., to the left of \*Vx) which cannot all as yet be specified; cf. also [97] \*tuxli, \*tuxl=ka 'feather, wing'.

## [36] \*kuuns'i- 'urinates'

> kos-   xuns'-	*u   *u	1 <sub>T</sub>
LF-C\UZOVH/T-QM	H297 U210 J77	

See also [209] \*kač= 'ant'.

## [37] \*puuri- 'bites, eats'

> por-   pur-	*u   *u	1 <sub>T</sub>
LFMC\UZOV-/ -nqm	H533 U405 J127.	

If the N and Q forms meaning 'burns' (J114) belong here, this stem had a high-low alternation in its second syllable: \*puuri- ~ \*pu(u)ra. See also [98] \*pura 'awl etc.' and [159] \*puna 'plaits'

## [38] \*suuŋV 'summer; thaw(s)'

> loŋ   tuw	*u   *u	1 <sub>T</sub>
LF--\--OV-/TNQM	H126 U451 J148	

There is uncertainty concerning the vowel of the second syllable

(Janhunen 1981.232); there may have been a (verbal?) light-isotope with first-syllable \*üü (L sâg'ñâ- 'thaws, becomes ice-free'; L1087).

[39] \*s'ujV 'sound, voice'

> söj   suj	*u > *ü   *u	1 <sub>T</sub>
LF-c\---OVH/----	H565 (U482 *o).	

pO shows conditioned fronting (to the left of \*j): \*u > \*ü. L čuoggjâ- shows early and regular \*u > \*a (> \*o > \*oo; L188 \*c'oojë).

[40] \*pukkV 'needle eye'

> poγ   pup	*u   *u	1 <sub>T</sub>
----\---OVH/----	H493 U880	

The following stem with OU \*u | \*u seems to have had a low vowel in pre-OU:

[41] \*s'awŋa 'staff'

> soγ   suw	*u   *u	1 <sub>T</sub>
LF---\---OV-/----	H578 U468	

With \*a > \*ä (to the right of \*s'- ?) > \*a > \*aa in pre-L (L125 \*c'aawŋee). The reconstructed cluster \*-wŋ- is a bit forced. Many rivals exist: cf. U885 \*s'a(a)ppa (H záp 'rung' = V +såáp=la '+post'), U764 \*saampa (F sompa '(ring of) ski-pole', Z zibq 'punt-pole') and \*čumpa (M čomba 'pestle of butter-churn').

1.4 \*ü | \*ü

[42] \*l'ük̥kV 'dense'

> l'ök-   l'ak <sup>w</sup> -	*ü   *ü	1 <sub>T</sub>
----\U-OV-/----	H373 U260	

[43] \*küti 'middle, interstice'

> köt   kot'l'	*ü   *ü	1 <sub>T</sub>
---C\---OVH/----	H337 U163	

## [44] \*küčä= 'birchbark vessel'

> köčm   kosm	*ü   *ü	1 <sub>T</sub>
--M-\--OVH/tnq-	H223 U153	

## [45] \*iwli 'treesap; moist'

> öL   KU il'	*ü   *ü	1 <sub>T</sub>
L---c\UZOV-/ -nq-	H23 U24, U73 j27	

L also may reflect early \*i > \*ä to the left of \*jCI < \*wCI; the C and P data are not particularly diagnostic. Perhaps it was an ablauting body-part stem: \*iwli~\*äälä-. The cacuminal lateral in O and the palatal in V may be connected with the secondary rounding in OU. Note also the Samoyedic words collected at SW27 under \*ilV=~\*ilV= 'Baumsaft', cited also at L45.

## [46] \*s'üδ'i 'burning coal'

> VVj söj   TČ sülüi	*ü   *ü	1 <sub>T</sub>
LFMC\--OV-/ -NQM	H563 U477 J508	

## [47] \*küči- 'smoulders'

> köč-   kos-	*ü   *ü	1 <sub>T</sub>
-F---\--OV-/ ----	H219 U153	

## [48] \*künči 'claw, nail'

> könč   kos	*ü   *ü	1 <sub>T</sub>
LFMC\UZOV-/tnqm	H287 U157 j55	

The S forms belong here only if we set up a heavy, non-nasal isotope of this word, i.e. the predecessor to Janhunen's pS \*k@tå (? < \*kucca).

## [49] \*likkV- 'jumps'

> lök-   lak <sup>w</sup> -	*ü   *ü	1 <sub>T</sub>
1F---\--OV-/ --q-	H353 U249	

F liikk=u- shows secondary lengthening to the left of a geminate.

## [50] \*s(')ük&amp;s(')V 'autumn'

> seγ <sup>w</sup> ës   tak <sup>w</sup> s	*ü   *ü	1 <sub>T</sub>
LFMC\U-OVH/ ----	H133 U443	

Reduplication? or suffixation?

- [51] \*kiixi=p 'shaman' s drum'

> köjp   kojp	*ü   *ü	1 <sub>T</sub>
----\--ov-/----	H234	

This word is attested in ObUgrian only. It is listed here because it is probably a derivative of a FU stem \*kiixi- 'be in heat' (UEW143; see [137] \*kiixi- 3<sup>1</sup>). Presumed ablaut: \*kixi- ~ \*käxj(=mä). The etymon for pOU would then be (\*)'locus/instrument of intense sound/affect/ecstasy'; compare also Z kam 'Balz(zeit/platz)' U657, which may derive from \*kiixi=mV much like Z sam 'bait' < \*s(')ixi=mV, see [292] and [232]. For the meaning-axis 'be in heat/mating season' ~ 'emit sounds' cf. F soi-'balzen' < [39] \*s'ujī 'resounds'.

- [52] \*s'üδ'/l'ki= 'spits, saliva'

> söjγ-   sal'γ-	*ü   *ü	1 <sub>T</sub>
LFMC\UZOV-/----	H564 U479 SV281,285	

Or we may reconstruct \*s'iwi=l'V(=kV-) in ablaut to \*s'äwä=.

The following words with OU \*ü | \*ü seem to have had a low vowel in the first syllable:

- [53] \*kääčä 'ring'

> köč   kis	*ü   *ü > *i	1 <sub>T</sub>
-FMC\UZOVH/----	H214 (U141 *e)	

In pV, the vocalism of this word may have been crossed with that of its synonym \*kic'V (U141 \*e); for pV \*ü we expect Sosva -o- adjacent to velars. Cf. also [13] \*päx=sä 'nest', above.

Items [54] and [55], both designations of body parts, had high/low ablaut in the protolanguage:

- [54] \*pikkä~\*päkkä 'swimbladder, belly'

> pöki   puki	*ü   *ü	1 <sub>T</sub>
1fM-\UZOV-/----	H500 U379	

For the development pV \*ü > u in this word see WSV280.

- [55] \*čänčä (~\*činči?) 'back'

> VVj čönč   sis	*ü   *ü	1 <sub>T</sub>
1F---\--ov-/----	H105 U56	

Compare, for the consonantal skeleton, pOU [259] \*čääñč 'knee' 5<sup>1</sup>.

The following etymology

[56] \*fänkV 'wedge, peg'

> löŋk   TJČ tüŋkél'	*ü   *ü	1 <sub>T</sub>
1---\--ov-/----	H147 U435	

in all likelihood presents an etymologie croisée. Cf. U887 \*s'VŋkV 'wedge' (H szëg), U846 \*lVŋV wedge (H ék).

2. Correspondence Type 2<sub>T</sub><sup>⊥</sup>: pO short high vowel = pV short low vowel.

2.1 \*i | \*e

Only one stem with this correspondence goes back to unambiguous pU \*i-i:

[57] \*piδi= 'high, tall; long'

> pel=it   pal=it	*i   *e	2 <sub>T</sub> <sup>⊥</sup>
-F---\--OVH/TNQM	H506 U377 J125	

The second-syllable \*i is assured by the reflexes in S (Janhunen 1981.230-1). This stem may originally have been deictic; cf. the H reflex fēl 'up(wards)'. Compare also, for shape and meaning, \*iδi (~\*ääδä) [382] 'in/to the fore'.

One stem had \*ü-i in pU:

[58] \*küntV= 'angry; mood; smoke, fog'

> Ni kant   kant	*i   *e	2 <sub>T</sub> <sup>⊥</sup>
-----\--OVH/TNQM	H290 U861 J79	

Presumably \*ü > \*i early in pOU. Contrast [15] 'heart'. For H köd 'fog', kedv 'mood, disposition', cf. Tálos 1983.419. For the meaning-axis 'mood/anger ~ fog/vapour' cf. Vogul seenjkʷ 'Nebel, Dunst; (nur N) Rausch' as in the collocation l'uul' seenjkʷ-në tis'ås xa(a)jtëmlawë 'er wird von einem Wutrausch getrieben', MK542a.

One stem probably had \*i-a in pFU:

[59] \*pic'la= '(berry of) mountain ash'

> pet'ä=r   pas'a=r	*i   *e	2 <sub>T</sub> <sup>+</sup>
-FMC\UZOV-/----	H480 U376	

The F reflex -h- suggests a shift from \*-c'- to \*-č-. The P words are doubtful: they not only require metathesis but suggest an original \*aa > \*o which then delabialized in Z, cf. the supposed development of FP \*aarja 'slave', U721.

Four deictic items may also be mentioned here. They are virtually useless for purposes of vocalic reconstruction, except that the first two, [60] and [61], seem to have had high/low ablaut, while the third [62] had front/back ablaut.

[60] \*i= ~ \*ä= 'PROXIMAL DEIXIS'

> iin   an'	*ii < *i   *e	2 <sub>T</sub> <sup>+</sup>
-FM-\UZOVH/TNQM	H36 U67 J19	

The length of the Ostyak pendants is presumably secondary.

[61] \*i= ~ \*ä= 'NEGATOR/PROHIBITOR'

> entem   at, aat'i	*i   *e ~ *ää	2A <sub>T</sub> <sup>+</sup>
LFMC\UZOVh/TNQM	H725	

The Vogul reflexes show ablaut, \*e ~ \*ää. See Simoncsics (*Linguistica uralica* forthcoming) for a detailed account of the loan relationships involving this stem in the eastern languages. The high/low ablaut is particularly well preserved in F e- < \*i= ~ ä=lä < \*ä= and M preterite negative stem e-z'- < \*i-s'- ~ imperative il'a- < \*ä(ä)=lä-; in Permian, both the present negative stem (e.g. Z, Ze o-) and the imperative stem i- come from \*ä- (or there was analogical levelling). This stem may also be the antecedent of the H interrogative particle --ë, where 'X--ë' 'Is it X?' would be a truncation of 'X ë X' 'It is X, it is not X'.

[62] \*mV= 'which' >

met.tä   ma.na	*i   *e	2 <sub>T</sub> <sup>+</sup>
LFMC\UZOVH/TNQ-	H375 U296 J91	

[63] \*päärä= ? ~ \*piri= 'back(wards)'

> perγi   LU pär	*i   *e	2 <sub>T</sub> <sup>+</sup>
-FM-\UZOV-/----	H541 U373	

A deictic root, perhaps with high/low ablaut.

The prehistory of the Vogul reflexes is not entirely clear; perhaps the lative -w (< \*γ) has exercised a distorting influence. It is also possible that this stem earlier was of correspondence-type 4<sub>T</sub><sup>L</sup>: if the pV \*e was the result of secondary shortening < \*ää, we may have had conditioned \*e > \*i in pO; in that case any clear evidence of an earlier high grade for this stem falls to the wayside.

In Fennic and Mordva, the meanings polarized: cf. F perä 'bottom, rear' < \*päärä > (folkl.) pir'a > pr'a 'top, head'. See also SKES on F perehty- 'gets used to, gets involved in, to the bottom of' 522a, perheq 'family' 523a, and compare the meaning-axis at [149] \*tiwä= 'quiet, calm; deep'.

Contrast, in LFM: \*pääri (Noun) ~ \*pirä- (Verb) > L birrâ 'around', F piire- 'circle', M pir'e 'fenced-in place' ~ M pir'a- 'einzáunen' (UEW384 \*i).

The following non-deictic stem may also have had high/low ablaut:

[64] *(j)äälä- ~?*jili- 'fresh water'	> V jelwäyl-; jeel   jal=t-	*i~*e   *e
	LFMC\UZOVH/TNQM	H185 U73 J27

The only clear evidence of a high grade for this stem is that presented by the OU forms. The Vogul words (including TJC jilt-, WSV270) show the regular developments of a pU high vowel. Vax Ostyak jeel 'spring, fresh water' < pO \*e presupposes an early ablaut within pO: \*i~\*e. For the meaning-axis ('lives, revives; spring, fresh water') cf. Russian živaä voda, živec, živun|; and Japanese |ike| 'pond' < \*ika- 'keeps X alive, gives life to X' Martin 1987.422, 696. On the other hand, H él- 'lives' and eleven 'alive' both derive from \*(j)äälä-, cf. Tálos 1983.419; the o- of Ze ol- (< \*ää) is equally decisive.

The following body-part designation almost certainly had high/low ablaut:

[65] *pääljä ~*pili 'ear'	> pel   pal'	*i   *e	2 <sub>T</sub> <sup>L</sup>
	L-MC\UZOVH/----	H507 (U370 *e)	

While the L and M forms indicate an original low vowel, the C, H and OU reflexes point clearly to an original high vowel. In Hungarian, \*i underwent secondary rounding > \*ü; this \*ü arrived too late to undergo the regular drop to ö seen in, e.g. [122] \*süli > öl 'fathom, lap' Contrast \*pääxli 'side' at [195] \*pälä. For evidence of \*ää ~ \*i within

OU, see [16] \*n('ääl('ä 'four'.

[66] \*kic'V= 'is smoky/bitter'

> kečmělt-   kassěml-	*i   *e	2 <sub>T</sub> <sup>⊥</sup>
-----\--OVH/-----	H222 U861	

The H reflexes, keser=ú 'bitter', keser=ed- 'becomes bitter' are ambiguous with regard to original tongue-height. If V kasěm 'yellow' belongs here (H222), the tertium comparationis is 'gall', cf. English [yellow]. Contrast \*kičV=kV (U113 and U641, H216).

[67] \*mirV- 'becomes narrow/stiff'

> mer.ěm   mar.ěm	*i   *e	2 <sub>T</sub> <sup>⊥</sup>
-----\--OVH/-----	H403 U871	

The H reflexes, all derivates, give a fairly extensive range of the meaning-axis of this root: merev 'stiff', meredek 'steep', mered- 'becomes rigid; projects', merő 'staring; merely, nothing but'. Cf. Vogul mar=l- '(com)presses', Vasjugan Ostyak marěm 'only'. Parallel meaning-axes may be found in the Romance (French étroit, Romanian strîmt, etc.) developments of Latin \*stri(ŋ)ktu- 'bound together, compressed' or in English [t(h)ight], a derivate of the root seen in Sanskrit tañc- 'draws together'.

For a possible further etymological connection see [173] \*märi.

The following, presumably affective, root works for OU only if there was a front-vocalic isotope.

[68] \*čukka- ?~\*čükkV- 'ruins'

> ček-   sak-	*i   *e	2 <sub>T</sub> <sup>⊥</sup>
-F---\UZOv-/-----	H95 U622	

Note the consonantal skeleton \*čVCCV. It is to such shapes that we must trace back Hungarian affective-descriptive formations such as csíp- 'pinches', csuk- 'shuts', csap- 'strikes sharply', csókol- 'kisses', and csëpp 'drop'. Contrast the next item.

[69] \*nikkä- 'stamps'

> nek-   TC näk-	*i   *e	2 <sub>T</sub> <sup>⊥</sup>
L---\--OV-/-----	H424 U304	

With secondary length in V KM -ää-. This root is also presumably

affective; cf. [127] \*lükkä- 'shoves'.

[70] *c'Vŋ&c'V=	'sparrow'				
> t'et'ëk   s'ans'i		*i   *e		2+	
-f---\---ov/-nqm		H75 U48 j141			

Fennic is represented only by Olonetsian and Ludian.

[71] *jälV-	'goes'				
> VVj jel-   jal-		*i   *e		2+	
-----\---OVH/-----		H184 U850			

See the excursus under [108] \*juktV- 'come, arrives'.

[72] *n'VčV	'(fish)hook'				
> Ni n'ašë   n'as		*i   *e		2+	
1---\---ov-/----		H441 (U313 *ä)			

The L word, which may not even belong here, is not well enough attested to make the case for an original \*ä convincing.

## 2.2 \*ë | \*i (achromatic)

The following stems [73] - [81] clearly had high back vowels. Stem [73] is unique in presenting clear evidence of \*i; stems [74], [75] and [76] are also candidates. The remainder probably had \*u.

[73] *jünsi	'bow'				
> jaγʷël   jowt		*ë   *i		#	
LFMC\---OVH/TNQM		H179 (U101 *o)	J25		

Q has front/back pendants: inti 'bow', ünti 'arc, rainbow'; cf. the H doublet ij(a-) 'bow', iv(e-) 'sheet of paper'.

[74] *sik&sii-	?~*su(u)ski-	'chews'			
> laγʷël   towt-		*ë   *i		#	
L-M-\UZOV-/ -eQ-		H129 (U448 *o)			

Janhunen (1977, 1981:257) did not think that the Enets forms belong here. Perhaps there was a pS \*titV~\*tutV 'chews', with the labial variant surviving in Selqup and Kamass: cf. pS \*pijå~\*pujå 'nose' J122. The M and P forms are best explained as deriving from a stem with \*u, but the L

points to \*i.

[75] \*tixu=ka 'printemps; flood'

> taγ <sup>w</sup>   tuuj=a	*ë   *uu < *u < *i ? #
-FM-\UZOvh/----	H621 (U532 *o)

Derived from the word for 'lake, rising of water-level', [35]. For the meaning, cf. English [spring]. F touko '(spring) harvest; the standing corn' would then be a further derivate \*tix(u)=ka=i.

The long \*uu in pV is presumably the result of a contraction in a derived form; cf. [91].

[76] \*i/ulnï 'bright white metal: Ar, Pb, Sn'

> VVj :olna   olën	*ë   *i #
---c\--ovh/----	H29 U581, U899

The vocalism of one metal-designation may have influenced that of another:

[77] \*surn'i 'yellow/red metal: Au, Cu'

> V loorn'ë   P tarën'	*ë   *i #
----\--ovh/----	H163 (U843 *a)

An Iranian LW, presumably inherited by pOU; see Korenchy 1972.77.

The H vocalism (a-a- of arany) neither contradicts nor confirms a Ugric unity at the time of borrowing. There are parallel forms in MCUZ, but these are separate borrowings (UEW843).

[78] \*kuč/ša- ~? \*küč/šV- 'pulls, hangs'

> koč-   xas=m=at-	*ë   *i #
L--c\UZOv-/----	H217 (U680 *V +front)

The C forms (e.g., KB kečē-) point to a front vowel in this word. The P evidence is ambiguous: the root vocalism of U kiš=et-, Z kiš=al-, and Ze këš=äl- can go back to \*u or \*ü. The evidence of L (L300 \*k@cåå-) is ambiguous. OU, however, requires a back vowel, probably \*u.

[79] \*munna 'egg; scrotum, penis'

> mon   LO mon	*ë   *i #
LFMC\--ovh/TEQ-	H394 (U285 *muna) J86

The Nenets word cited at U285 does not belong here, but the Enets mona (J86) does. My suggestion here is that the cacuminal in Ostyak dialects (VVj, Kaz) and the palatal reflexes in Hungarian (-ny-, -gy-) derive from an original geminate nasal; cf. [124] 'elbow'.

## [80] \*kum= 'lies prone; falls'

> kamëtyï V -oo-   xomi	*i~*ë   *i	#
LFMC\UZOVH/TNQ-	H274 U201 J52	

The forms in the Ostyak dialects show ablaut: \*i~\*ë. The Vogul forms descend from \*i (WSV233). There is uncertainty concerning the vowel of the second syllable: cf. pS \*k@m@- J52; perhaps this item was originally of the shape \*CVC. Or there may have been a high/low alternation in the second syllable, corresponding to a grammatical or lexical opposition along the lines stative~active. See the discussion at [98] and [117]. For possible derivates of this stem see [399] and [125].

## [81] \*unjV= 'spit; insect's stinger'

> an <sup>w</sup> tëp   owta	*ë   *i	#
---c\---ov-/----	H17 (U342 *o) j20	

The UEW adduces Samoyedic words, but they mean 'blade' and presuppose pS \*ä.

In the following two (F)U words, the greater part of the evidence points to an original low vowel.

## [82] \*kax(=)sī 'pine/fir/spruce'

> kol   xo(o)wt	*ë   *i? *aa?	#? 4 <sup>11</sup> ?
LFMC\UZOV-/TNQM	H236 (U222 *u/*o) J 61	

The difficulty here centres on distinguishing long from short low vowel before w in Sosva: WSV243f. If originally long, the Vogul would match well with the low vowel reconstructed by Sammallahti 1988.538 and Janhunen 1981.240 for this word, chiefly on the basis of the Samoyedic evidence. The correspondence-type would then be 4<sup>11</sup>.

Could the proto-Lapp word for 'birch', L1155 \*sååkee < \*kaasa, be a taboo-metathesis of this word? If as suggested here \*kax(=)sī 'pine/fir/spruce' is derived, it is derived perhaps from the same stem which gives \*kax=jī 'birch' (UEW169 \*kojwa > V xaa=l'; there is no Ostyak pendant).

## [83] \*laans'a 'warm, soft'

> DN luunt'ë   lons'inj	*ë   *i	#
L---\--OVH/----	H362 U250	

The L forms (see now L611) clearly indicate an original \*aa in this word; the -á- of H lágy would then be a retention, as in H ház 'house' < \*kaata > L goatte and others.

The same vowel correspondences obtain among O, V, and H in the following word:

[84] \*s'irV 'forearm, lower leg'

> sor   sor	*ë   *i	#
-----\--OVH/-----	H604 U890	

However in the light of the vowel of H szár 'stem' and its derivate szár=ny 'wing' we may equally well reconstruct \*s'axV=rí. Conditioned fronting to the right of the initial \*s' (~ \*c') would give the kind of shape required by the FP forms listed at UEW612, e.g., F sääre- '(Unter)schenkel' and the derivates M +s'ejer'=ks 'underlimb', Ze c'yr=ës 'sock'.

Hungarian has -a-, not -á- in its reflex to the following:

[85] \*\$VkkV= 'gets stuck'

> lak <sup>w</sup> in- V -öö-   taxn-	*ë   *i	#
-----\--OVH/-----	H122 U845	

Hungarian has ak=ad-. Compare the \*č-initial background of the roots mentioned under [68] \*čukka- ?~\*čükkV- 'ruins'. The long á in the root of H áglál- is presumed secondary because of its late attestation (TESz104).

[86] \*\$un(V)=lV '(root vegetable)'

> V Looγël   TJC tanjél	*ë   *i	#
-----\--OV-/---qm	H149 U451	

Helimski (see UEW Vol III page 9) thinks not only the Sayan Samoyedic forms cited by the UEW to be cognate, but also adduces Mator forms. However on the basis of the root vowels in Selqup (-o-) and Kamassian (-u-) it seems that Paasonen (Beit. 299), among others, was correct in doubting that these forms are related to the ObUgrian ones. They are probably loans from the same language which gave the words to pOU. As opposed to what is maintained by the UEW s.v., the areas in which pV and pQ were spoken were not at all remote from one another; quite to the contrary, we must assume interpenetration and extensive bilingualism.

A secondary labialisation in pV \*i > \*u seems to have occurred in the following four stems:

## [87] \*tu/i= 'DISTAL DEICTIC'

> tom(i)   tot, tuw	*ë   *i, *u	#
LFMC\UZOVH/TNQ-	H611 U527	

Of little or no use for purposes of vocalic reconstruction.

## [88] \*iti= 'thing'

> V oot   ut	*ë   *u < *i	#
-f--\---OVH/----	H733 (U20 *atV)	

The L forms cited by the UEW cannot belong here if we depart from \*i; a departure even from \*a causes difficulties. The -s- of the Fennic forms, e.g., E asi, sG asja, could be due to the phonotactics (\*-ti-) of a derived form \*itija > \*atija; but these are probably old Germanic loans.

## [89] \*puski- 'pricks'

> paγʷël-   puwt-	*ë   *u < *i	#
LFC\---OV-/----	H499 U408	

The change \*i > \*u makes most sense if it occurred after the metathesis \*-łγ- > \*-γł-.

## [90] \*wixlV 'pole'

> Kaz wɔl   ula	*ë   *u < *i	#
-F---\---OV-/----	H682 (U579 *o, *oo)	

If Finnish vuole- 'Dachsparren' (SKES1818a) is related to the OU forms we need to derive its -uo- from p(F)U \*i. This word is tantalizingly reminiscent of [121] \*uli(=ki) type 2<sub>T</sub><sup>1</sup>, q.v.

The next stems show an Ostyak|Vogul correspondence which is one degree further removed from the \*ë | \*i type under discussion here. This 'two-step' correspondence, \*ë | \*uu, must have been arrived at secondarily, via both labialization and lengthening in pV. The order in which the operations occurred is unclear; I write \*uu < \*u < \*i here merely as a convenient consistency.

## [91] \*s'iwi= 'clay, loam'

> sayʷi   suul'i	*ë   *uu < *u < *i	#
-FMC\ -ZOV-/----	H580 (U468 *a)	

It is relatively easy to conceive of a change from pFU \*s'iwi to pOU \*s'iγu in terms of a delay in lip-rounding: the labiality of FU \*-w- is shunted over to the subsequent vowel. If we then depart from a pOU form

\*siiyu= we can account for the O|U correspondence \*ë | \*uu via secondary processes in pV: labialization (by assimilation, viz., \*i > \*u to the left of second-syllable \*u), then lengthening due to contraction in a derived form; cf. [75] 'spring' and V suu=p 'mouth' < \*s'axi=p (UEW492 \*s'uwe).

[92] \*tiltu= 'fever; magic'

> Vj toolt   N tuult	*ë   *uu < *u < *i	#
-----\--OVH/-----	H637 U895	

In this case (contrast [91], immediately preceding) there is no discrepancy in the morphemic make-ups of the Ostyak and Vogul forms which may be summoned to explain the length of the Vogul \*uu. Perhaps the necessary and sufficient conditions reside in the phonological nature of the final cluster, resonant plus stop: cf. stems [93] and [94] immediately below.

This etymology presents difficulties at every level. It is possible that even the Ostyak dialect forms (Vj 'fever', Kaz 'Erleichterung bei Krankheit') are not related, as the lemmatization at DEWOS1432-3 implies. Honti's option of reconstructing \*åå for pO seems motivated only by the putative Vogul correspondent: cf. [297] 'goose', [371] 'star', [293] 'three', [298] 'swamp'.

[93] \*wimta 'forest; wild'

> wont   N uunt	*ë   *uu < *u < *wi	#
L---\--OVH/-----	H691 (u556 *a)	

The UEW takes V uunt to be a loan from O. In this word the labiality in V is probably due to the initial \*w-; in any event, the L reflexes (L1479) require second-syllable \*a.

[94] \*s'i(n)ka 'thin ice'

> t'aγʷ   s'uunjk	*ë   *uu < *u < *i	#
L---\--OVH/-----	H80 (u29 *a)	

The UEW adduces a Middle Lozva Vogul form which is probably a loan from O. Once again the L forms (L190) require second-syllable \*a. Perhaps the secondary rounding in the V pendant is connected with the equally secondary nasality.

Finally, the short achromatic correspondence underlies two old loans, from or via Turkic, into pUGRIC. These were probably by this time of the shape \*CVC:

## [95] pUGRIC \*s̥i̥w 'word/song'

> say <sup>w</sup> ē   sow	*ē   *i̥	#
-----\--OVH/-----	H575 (U885 *a)	

The illabiality of pV \*i̥ and older Hungarian -a- in szav(a)- would then be a retention; contrast the next item.

## [96] pUGRIC \*li̥γ 'horse'

> laγ <sup>w</sup>   luw	*ē   *u < *i̥	#
-----\--OVH/-----	H350 (U863 *u)	

The labiality of pV \*u and pH \*u > lov(a)- would then be secondary, due to the \*γ which is favoured by Ligeti 1986.139 for explicit reasons, and entertained by the UEW for tacit ones.

## 2.3 \*u | \*ē

## [97] \*tuxli, \*tuxl=ka 'feather, wing'

> toγēl   towēl	*u   *ē	2 <sub>T</sub> ↑
LFM-\UZOVH/TNQM	H624 (U535) J166	

The L (L1267) and M forms make it clear enough from the western end of Uralic that this stem had a profile \*u-a.

From the eastern end, the -@j coda of pS \*tu@j indicates a syllable-closing \*xl in pre-Samoyedic. The relevance of F sulka 'pinion' and E sulg (sG sule !) 'feather, pen' here hinges on whether or not we can be convinced that \*t- > s- in pre-Fennic to the left of certain back-vocalic sequences. See also [35] \*t̥ixu 'lake'.

Or L sol'ge 'ahkion lisäjalas' (L1147) and F sulka are a separate word (SKES1102b).

See also [301] \*siijV= 'arm, sleeve'.

## [98] \*pura 'awl, drill, borer'

> por   TJC porēē	*u   *ē	2 <sub>T</sub> ↑
LF--\UZOVH/-NQ-	H531 U405 J114	

(1) It is not clear whether this was originally a verb or a nominal stem. The underived P forms (UZ p̥ir 'through') suggest it may have been neither. (2) A further complication is its resemblance to the stem [37] \*puuri- 'bites, eats' (1<sub>T</sub>); the form and meaning of U p̥iri=c'a 'Hohleisen'

could be due, at least in part, to this resemblance. (3) We should think also of the P reflexes of (UEW408) FP \*purV- 'enters', UZ pür-, with the causatives Z pür=ëd-, U port-; at least the latter has a derivative meaning 'Bohrer': port=on (WUK204a).

All three difficulties would be surmounted if we assumed a high/low alternation in the second syllable, with tongue-height correlated to a lexico-grammatical category something like stative~active (cf. [80] \*kum=): \*puuri- 'bites, eats < (\*) 'is in piercing, cutting, penetrating mode' ~ \*pu(u)ra- 'enters'. This would mean that the FP reflexes cited at UEW408 also belong here; thus C pér- 'bites, chews' and pérë- 'goes in' would go back to second-syllable ablauted forms of the same root, as would UZ pur-/pür-. Cf. [2] \*mini- 'goes'.

The adverbial 'through, hindurch' is also easily accommodated; for the meaning-axis, cf. English |drill, thrill| and |through|.

[99] \*s'uka 'bast, bark; hide'

> soγ <sup>w</sup>   sow	*u   *ë	2 <sub>T</sub>
-E---\--OV-/----	H574 U488	

The H word cited here with "???" by the UEW, szij, probably belongs elsewhere.

[100] \*tukta 'cross-strut (in boat)'

> toγët   toxët	*u   *ë	2 <sub>T</sub>
1--C\ -zovh / -NQ-	H630 U534 J149	

The first-syllable \*@ of pS \*t@t@(=) and the survival of the second-syllable vowel in Q assures us that the pU vocalic profile for this stem was \*u-a (Helimskij 1976, Janhunen 1981.227). The L form, (Friis) totko, has the right vowel for the first syllable but might be a North Germanic loan (cf. Danish tofte) like L duok'to and F tuhto, tohta (SKES1379a) and tohko (SKES1322a). H -a- in an underived form is disturbing; the expected form would be \*tot.

[101] \*pus'ka 'diarrhea, feces'

> pot'   pos'	*u   *ë	2 <sub>T</sub>
LFMC\--OVH/----	H479 U397	

The vocalism of this doubtless affective term is not at all clear. The F pendants reflect \*a-a, L pendants (L871) reflect \*i-i. Possibly connected with \*pu(n)c'V- 'squeezes/wrings out' UEW397 \*puc'V=rV- '(aus)drücken' > pO \*ë; see also [163].

[102] \*purki 'snow) storms'

> porki | porxaj  
LFMC\UZOV-/----

\*u | \*ë  
H539 U406

2<sub>T</sub><sup>+</sup>

The primary meaning was not about snow as such, but rather something more like (\*) 'wind whirls, whirlwind', and the UEW is therefore unnecessarily diffident about citing the OU forms: meanings such as Vax Ostyak 'Viehrauch (zum Vertreiben der Mücken)' or, for that matter, L 'smoke; be doing something in the water which makes it splash all around one' (bor'ge-) are quite understandable if we depart from a root meaning (\*) 'turns (rapidly)' such as that reconstructed at UEW414. Note also H forog-, férgeteg and V powér(=t-) MK469-470). Affective/onomatopoeic; cf. the next item.

[103] \*pulV- 'splashes, flows gushingly'

> Ni polij- | polyalt-  
----\--OVH/----

\*u | \*ë  
H511 U881

2<sub>T</sub><sup>+</sup>

Cf. [102] \*purki '(snow) storms, wind whirls; whirlwind'.

[104] \*n'uufs'i 'sable, marten'

> n'oγës | n'oxës  
-E--\--OVH/-n--

\*u | \*ë  
H449 U326

2<sub>T</sub><sup>+</sup>

The N forms cited by the UEW probably do not belong here: pU \*u should not give N @, not o.

[105] \*suuksi 'ski'

> Vj joγ | towt  
-FM-\--OV-/TEq-

\*u | \*ë  
H123 U450

2<sub>T</sub><sup>+</sup>

Janhunen 1981.236 disallows the Q verb tat- 'Ski laufen'

[106] \*luki- 'counts'

> lonjët- | lowint-  
LFMC\UZOVh/-n--

\*u | \*ë  
H358 U253

2<sub>T</sub><sup>+</sup>

The O pendant is a verb meaning 'reads, reckons', as in -FMC/; the V pendant is the numeral and decade-formant 'ten', as in L--C\ Permian preserves only traces of a derivate \*luki=ntV, as in UZ lid 'number', Z lid=j- 'counts, reckons, reads'. The -v- of H olvas- presents problems akin to those of [26] \*sula- 'melts'.

[107] \*lika- 'washes, soaks'

> l'oyit��-   lowt-	*u   *��	2��
-F---\--ov-/----	H349 PS DEWOS870	

The root is widely attested in F (SKES295a), chiefly in forms derived with \*=i. Note the vocalic profile \*i-a.

[108] \*jukt  - 'come, arrives'

> jo��t-   joxt-	*u   * ��	2��
-----\--ovh/----	H183 U851	

The EWU (605b, 652b) rejects connecting this item with \*jukka- 'goes, arrives' UEW88. We should note, however, that the sole western reflex of this latter reconstruction is the M jaka-, which can descend quite regularly from \*jikka-.

*Excursus on verbs of motion.* It is difficult to believe that this verb and all seven of the other verbs of motion reconstructed by the UEW as having initial \*j-,

UEW100 *jomV- 'gehen, sich auf den Weg machen'	-----\---vh/----
UEW89 *jama- 'umkommen, verlorengehen'	L-MC\-----/----
UEW850 *j��lV- 'gehen'	-----\--ovh/----
cf. [71]	
UEW108 *jVrV- 'sich verirren, irre gehen'	-----\u-ovh/----
cf. [115]	
UEW109 *jV��/��/kV- 'kommen'	-f---\--ovh/----
cf. [108a]	
UEW88 *jakka- 'gehen, gelangen, geraten'	-M---\----H/----
UEW106 *juta- (read: *-tt-) 'gehen, wandern'	L-M-\-----/----

are unconnected. The geminates (\*-kk-, \*-tt-: see Keresztes 1986.46-7 for \*juttV- ) are suggestive of affect; perhaps initial \*j- should suggest affect to us as well? Or could it be a trace of a deictic preverb? We may easily extend the list with such purely Fennic items as johta- (SKES117b) and jouta- (SKES120b); the semantic overlap of this latter verb with jaksa- (SKES112b; cf. Flint 1980.60-72) suggests the matter is even more complicated.

- [108a] \*jäñä- '(be)comes; remains'

> ji(γ)-   ji/a-	*i~*ü   *i~*e	2A <sub>T</sub> !?
-f---\---OVH/----	H169 U109	

The meanings 'remains, tarries' in F are not problematic if we reconstruct (\*)'comes into X', even (\*)"gets stuck into X'; i.e., not a stative. F jää- is to this day construed with illatives.

The difficulty is with the vowels in OU. It appears that there has been considerable analogy within the paradigm of this verb and perhaps contamination with others of similar or opposite meaning: see H227 \*kuuδ'-/\*kiiδ'- 'verlassen/bleiben' and H651 \*wiij-/\*wiijγ- 'nehmen'. The matter is too complex for useful discussion here, and must be left for another time.

- [109] \*jVttV 'friend, mate; with'

> jot   jot	*u   *ë	2 <sub>T</sub>
----\---OVH/----	H210 U852	

The devolution of this stem from noun to postposition in OU undermines the testimony of these languages concerning the original vocalism. For parallel lexico-syntactic developments elsewhere in FU see the UEW s.v.

- [110] \*kutēñV 'swan'

> kotēñ   xotan	*u   *ë	2 <sub>T</sub>
----\---OVH/----	H342 U857	

The H pendant hattyú shows the expected low-vowel development of \*u in a derived stem: cf. the antecedents of facsar-, talál-, and hall (Tálos 1083.419), and contrast underived 'beaver, mole' H hód < \*hod < \*kuntV EWU566b -- Sosva xuntél' 'mole' with pV \*u.

An old Turkic loan, probably into pUGRIC. As Ligeti (1986.139) points out, there is no need to set up \*-tt-.

- [111] \*tulkV 'dragnet'

> Ni toxët   toliγ	*u   *ë	2 <sub>T</sub>
----\---zov-/----	H636 U536	

The oblique stem of Z tilq (tilj-) presumably reflects the \*k.

- [112] \*kula- 'wears out, falls out'

> kol(a)-   xol-	*u   *ë	2 <sub>T</sub>
1F---\---OVH/----	H254 U199	

This is the same root as that reconstructed by the UEW as \*kulV- (UEW200):

-----\ -z-vh / -----

\*- | \*u

In pV there was a lexical bifurcation, giving a doublet, e.g., (Sosva) xul- (MK120a) 'sich schälen; abgehen, ablösen (Rinde des Baumes)' ~ xol- (MK98b) 'zu Ende gehen, sich abnützen'.

A derivate of the same root is:

LFM-\UZO-H/-nq-

U198

which the UEW reconstructs in a shape compatible with \*kuulki- 'sich bewegen, gehen (zu Lande und zu Wasser)'. The protovowel of the putative Ostyak pendant (see also DEWOS457) would be \*uu; could the length of this segment be due to the morphotactics? The metathesis needed to explain the Ostyak, \*-lk- > -γ(V)l-, is perfectly normal, cf. [111] 'dragnet', [97] 'feather', [7] 'flies'.

We may therefore reconstruct a derivate of \*kula-, namely \*kuul=ki-, with long \*-uu- conditioned by the morphophonemics (lengthening compensatory for the weakening and deletion of the second-syllable \*-a) and accounting for L -o- and Finnish and Hungarian -u-; the -ll of the Hungarian, referred to as "gemination" by the UEW, would then be a trace of the \*-lk- cluster; cf. H húgy 'urine' < [36] \*kuun'tí for the vowel and H toll 'feather' < [97] \*tuxl=ka for the consonantism. For a close Hungarian/Vogul parallel, cf. V tox=r- 'stopfen' (< \*ë), H dug- < \*tuuŋki- UEW537. Hungarian halad- 'proceeds', on the other hand, can descend from a derivate built with \*=ntV from either \*kula= or \*kuul=ki=; compare Tálos 1983.419.

The Z reflexes of \*kula-/ \*kuul=ki- are also suggestive. They are respectively gil=al- 'streuweise und allmählich herabfallen' and kil=al- 'mit dem Strom fahren oder schwimmen', i.e. \*kVLV- gave g- but \*kVlkV- gave k-. The -i- of one verb may be in analogy to the other.

[113] \*kuδ V= 'morning'

&gt; koltåyl | xol

\*u | \*ë

2<sub>T</sub><sup>1</sup>

-----\ --OVH / -----

H242 U193 j77

The /TENM (except Q kar, cf. [105] 'ski') forms cited by the UEW belong together but not here, since they require an earlier \*kum(V). See also [401] \*kuj(i)=nVI 'Morgenröte'.

[114] \*kumV= 'tussock'

&gt; Ni xomës | xomës K102a

\*u | \*ë

2<sub>T</sub><sup>1</sup>

-----\ --OVH / -----

H273 U860

The H pendant is hant '(Erd)scholle, (Grab)hügel'. OU built words from

this stem with \*=*s*', Hungarian with \*=*ttV* as in H mënyét 'weasel' ~ mëny 'daughter-in-law', cf. [139] 3<sup>1</sup>. If these formations are derived from a verbal stem, we may compare [399] \**kum=pa* 'wave' and [125] \**küm=pä* 'overfull', below.

[115] \**jurV-* 'forgets, errs; gets lost'

> <i>jurëyl-</i>   <i>jurëwl-</i>	*u   *ë	2 <sub>T</sub> <sup>1</sup>
----\U-ovh/----		H206 U108 j50

We can take the long vowels of such forms as Vogul P *jaarl-* and N, LM *jååril-* (MK177a) to be secondary.

[116] \**kïra-* 'peels, flays'

> <i>kor-</i>   LU <i>kʷa(a)r-</i>	*u   *ë	2 <sub>T</sub> <sup>1</sup>
----\--ov-/ -NQM		H306 (U184 *u, *o) j69

Here, too, the (vacillating) long vowels in Vogul LU are secondary; see WSV255. The root is listed here because it is necessary to point out that the S words cited by the UEW belong here only if we depart from a pU \**kïra-*. We would then have to reckon with secondary labialisation on the OU side.

[117] \**kun'n'a-* 'shuts eyes'

> <i>kon'-</i> , Ni. -a-   <i>xon'-</i>	*u~*i   *ë	2 <sub>T</sub> <sup>1</sup>
-fMc\UZOVH/TNQM		H295 U208 J53

With affective geminate \*-n'n'-; cf. [124] \**kün'nä-* 'elbow'. Ostyak reflexes proceed from either pO \*i (Ni., Kaz.) or \*u (elsewhere); WSO81-85. The Z pendant, *kun'-*, has restored (or retained?) the original \*u to the left of k-; compare [402] 'spawns', [36] 'urinates', and \**kupsa-* 'extinguishes'. For \**kupsa-* (also with pO \*u~\*i) see UEW214 and SW54; Rédei 1988.373.

The C pendant, *kämë-*, is doubtful unless we suppose metathesis with the consonant of an unattested derivational suffix \*=*mV*, cf. C *tëmen-* 'learns' < \**tuna=mV* UEW537.

The S reflexes indicate that this stem had a second-syllable alternation connected with an active/stative opposition. See also [98].

The F pendant, *kyyny* 'half-open state of eye', may be a nominal derivate of a light isotope of this stem. Janhunen also compares (1981.255) the widely attested word for 'tear',

which we may reconstruct as \*kün'n'V(=lV). The H and Q reflexes show little and no trace, respectively, of a derivational suffix in this word.

[118] \*wiksVr 'fox'

> J waksar   oxsar ----\--OV-/----	*i   *e < *u H679 (U886)	1 <sub>T</sub> ? 2A <sub>T</sub>
---------------------------------------	-----------------------------	-------------------------------------

This word is native only to ObUgrian, but the UEW mentions it in order to reject the idea that it is a compound of the words for 'copper/iron' (UEW560) and 'hair' (UEW886). Its vocalism is regular if we assume delabialization \*wi- > \*u- in pV. Designations of the fox, an animal which is neither domesticated nor sacred, are often built to stems with reference to the animal's skin or hair: cf. F kettu 'fox' from kete- '(thin) hide' via affective gemination (SKES185) and Sakhalin Nivkh ke=q 'fox', a nominalization of the verb ke- 'puts on clothes, gets dressed' ~ xe- 'dons', with parallel pe=q 'chicken' < pe- ~ fe- 'picks, gathers' (RA).

[119] \*tuδ'(-)ka= 'tip'

> toj   tol'ëx, tal'ëx LF--\U-OVH/----	*ü~*u   *ë~*i H616 U533	2A <sub>T</sub> 2A <sub>T</sub>
---	----------------------------	------------------------------------

With secondary fronting in e.g. VVj töj, and secondary delabialization in the V So variant tal'ëx (< \*i).

The following word seems to have had a low vowel originally:

[120] \*čačV= 'is born; grows; kin' >

DN čačë   sossa --MC\UZOV-/tnq-	*u   *ë H92 (U52 *ča[n]čV-)	2A <sub>T</sub> 2A <sub>T</sub>
------------------------------------	--------------------------------	------------------------------------

Presumably affective; perhaps reduplicated, in which case Z c'- is the result of dissimilation, cf. the fate of \*čää&čä (UEW34 \*c'ečä) '(n)uncle'. Probably a FU core innovation; only the (incorrectly adduced) S forms would require \*-n-.

For a close parallel of the development both of vowels and partes orationis, cf. [396] \*wanča-.

In the following word there seems to have been secondary lengthening in pV:

[121] *uli=, *ul=kī 'pole, rod, bar > Ni oxēt   aawla LfM-\-zov-/TNQ-	*u   *aa < *ē < 2 <sub>T</sub> H734 U543 J29
---	---

The UEW incorrectly assigns the S forms , which are without derivational suffix, to [90] \*wixlV (type #; the stems may ultimately be related). The secondary lengthening seen in V was presumably caused by the \*wl (< \*lγ < \*lk) to its right. See WSV243 on the difficulty of V quantity to the left of w(C).

## 2.4 O|V correspondence \*ü | \*e

In the following two roots, O|V \*ü|\*e and pS \*i probably go back to pU \*ü:

[122] *süli 'fathom, lap' > löl   tal LFMC\UZOVH/TNQM	*ü   *e < 2 <sub>T</sub> H137 U444 J163
--	--

[123] *nüδi 'helve, shaft' > nöl   nal LFM-\--OVH/TNQ-	*ü   *e < 2 <sub>T</sub> H419 U304 J102
---	--

We would expect Hungarian \*nöl. The attested form, nyél ~ nyele-, is derived more readily from a low-vowel grade \*nääδä (< \*\*näwδä, with \*äw ~ \*ü ablaut?).

Possibly connected with UEW713 \*n'iδA- 'fastens, attaches', attested only in LFM-\.

[124] *kün'n'ä= 'elbow' > köN=jí   kon+ LFMC\UZOVH/----	*ü   *e < 2 <sub>T</sub> H281 (U158 *i, *ü)
--	--

Perhaps with affective geminate \*-n'n'-, resulting in the cacuminals in Ostyak and long vowels in F (kyynä=rä < \*küinä= < \*kün'n'ä). See also [117].

[125] *küm=pä 'overfull' > kömp   kamp ----\--ov-/----	*ü   *e < 2 <sub>T</sub> H270
---	----------------------------------

Affective. Attested only in OU, but listed here because it is perhaps the light isotope of \*kumpa 'wave', itself perhaps a derivate, cf. [114] 'tussock'.

## [126] \*kil'i- 'tickles/itches'

> köl'ëγ-   kal'γ-	*i > *ü   *e	2 <sub>T</sub> <sup>+</sup>
-----\UZOV-/-----	H263 U157	

Affective-descriptive. Given the P testimony, pO \*ü is probably secondary in this word.

## [127] \*lükkä- 'shoves'

> Ni luk=ëm-   KO läk <sup>w</sup> -	*ü   *e	2 <sub>T</sub> <sup>+</sup>
-F---\--OVH/-----	H354 U248	

Affective. With secondary length in e.g. Vogul P lääk-. For general shape and semantics, cf. [69] \*nikkä-.

## [128] \*säxi= ?~\*sixi= 'pus; decay(s)'

> löj   saj	*ü   *e	2 <sub>T</sub> <sup>+</sup>
L-MC\UZOVH/TNQm	H118 U434 J161	

This body-part designation may have had a high-vowel alternant \*sixi=; departure from such a form leads more easily to the P and OU forms. Its derivational profile was quite complex already in pS: see J161. I take Janhunen's revised reconstruction for the Samoyedic, \*ti@j (1981.242), to be an attempt to account, indirectly, for both the -i- in Mator and the -e- in Selqup. This vocalic sequence \*-i@- could derive quite readily from a pU \*-äxi-; cf. \*pä(ä)xli at [195] \*pälä.

There was also possibly a derived (or reduplicated) FP form \*säx&sä 'filth(y)' > UEW755 \*säksä, with reflexes in eastern L, M ('Unreinigkeit am menschlichen Körper'), and P (U ses, Z sës). It is intriguing to notice that a precise vocalic parallel to U ses = Z sës occurs in U sep = Z sëp < ?\*säx=pä, cf. pFU \*säppä UEW435. See also [257] \*päki 'pinecone'. If the \*-ü- of pS \*tüt 'Scheisse' (SW611) can be a product of contraction of the sequence \*ix to the left of a consonant (cf. [138] \*wixti) we may posit pre-pS \*six=ti, or perhaps a reduplicated \*six&si. This would provide additional evidence for a high grade for this word.

## [129] \*tü(ü)ŋV=ti '(arrow) quiver'

> tiiγ <sup>w</sup> et   tawt	*ii < *i   *e	< 2 <sub>T</sub> <sup>+</sup> ?
-----\--OVH/-----	H632 (U894 *täŋV=tV)	

With secondary lengthening (or retention of length) in pO, and normal rotation in pV. For \*ü(ü) > ä in Hungarian forms derived with vocalic suffixes see Tálos 1983.419. See also Honti 1985.155.

The following pronominal stem probably had high/low ablaut already in pFU:

[130] *sä(w)= ~*si(w)= 's3 PRO'			
> leγ <sup>w</sup>   taw	*ü   *e	2 <sub>T</sub> <sup>⊥</sup>	
LFM-\uzovh/----	H125 U453		

I propose setting up a stem with final \*w in line with the following considerations. The \*ü set up for pO is probably secondary, from earlier \*iw. In Vogul TC the ü is secondary (< \*ew) to the left of the w, WSV268. This V w and its Ostyak analogues are supposed to have developed from a reputedly Ugric pronominal suffix-formant \*=ŋ. The UEW questions the appurtenance of the P forms here, since they may have developed within pP from demonstratives. It is striking, nevertheless, that the extremely rare U|Z o|i correspondence found in these pronominal reflexes matches exactly that of the fish-name reconstructed as \*säwnä UEW437.

[131] *wäc'tV=rV= '(bird; Motacilla?)			
> Ni wors'ik   wars'ëx	*i   *e	2 <sub>T</sub> <sup>⊥</sup>	
1FM-\--ov-/----	H711 U562		

This word may have had \*ü in pO.

### 3. Correspondence-type 3<sub>T</sub><sup>⊥</sup>: pO short low vowel = pV short low vowel

#### 3.1 O|V \*e|\*e

[132] *ipsi 'smell, taste'			
> äpel   at	*e   *e	3 <sub>T</sub> <sup>⊥</sup>	
L-mc\ -zovh/TNQ-	H53 U83 J16		

The UEW segments this word in the hope of accommodating the reflexes of pU \*s' in M, C, and certain verbal derivates in O.

[133] *kiwi 'stone'			
> käγ <sup>w</sup>   kaw	*e   *e	3 <sub>T</sub> <sup>⊥</sup>	
-FMC\UZOVH/----	H235 U163		

The broad distribution of this word in FU makes its absence in L all the more striking. Compare [26] 'melts', [141] 'tooth', [213] 'is, lives'; and perhaps also [34] 'bone' and [53] 'ring'.

[134] *niimi 'name' > näm   nam	*e   *e	3↓
LFMC\UZOVH/TNQM	H428 U305 J102	

Wanderwort; taboo? The low -e- of Hungarian név ~neve- follows Tálos' rule Rd, 1983.419.

[135] *šiniri 'mouse' > läŋkʷär   tanjkér	*e   *e	3↓
-FM-\UZOVH/----	H150 U500	

Wanderwort, but perhaps also a playful/taboo distortion of [292] \*sixi- 'eats'.

For H egér ~egere- see Tálos' rule Ra, 1983.419.

[136] *s'ic'i=lī 'lizard'	*i~*ë   *ë	3↓
> V soosël DN -a-   sosl(a) 1f-c\uzov-/----	U454 J151	

Affective/descriptive. Not, at least at present, a particularly helpful etymology. The Vogul forms may be loans from Ostyak. The Samoyedic words cited by the UEW (with the exception of the Nganasan) presuppose \*a. L st-, U k-, Tym Selqup č- all indicate that even if the etymology holds, all these words were re-made in the separate, subsequent histories of the daughter languages. See also Janhunen 1981.235-6.

[137] *kiixi- 'on heat, rut'	*e   *e	3↓
> kœj-   kaj- Lf--\zovh/----	H231 (U143 *keje-, *kvjγV-)	

F kiehu- 'boils', keittä- 'cooks'; and kii=ma 'rut', kii=vax 'impetuous' (with back vocalism; why?) also probably belong here, cf. Sammallahti 1988.543. Or is kiehu- from a low vowel? The trajectory would then be kiehu- < \*kee=hu- < \*käx(i)=šV=u-. Note also F kiireq 'haste' and the 'kiire' meanings of kii=vax (kiivas) at SKES192b.

There is some slim evidence of a nasal in this word: cf. M ken'er'e- 'ripens, gets ready, ehtii' (not in Keresztes 1986), cited, with "?", under kiireq (SKES191b).

Have we then to deal here with two roots, croisées? or bifurcated? We might want to distinguish \*ki(i)ŋi= 'hastens' from \*kiixi- 'is on heat'.

Our \*kiixi- may also have had a low-vowel alternant, seen in such nominal derivates as \*käxi=mä > L gieib'me 'oestrus' but not attested in OU. Cf. also [51] \*kiixi=p 'shaman's drum'.

## [138] \*wix=ti 'five; ten'

> wät   at	*e   *e	3↓
LFMC\UZOVH/TNQM	H722 (U577 *witte) J177	

A Uralic etymological crux. Among the problems: aberrant gradation L; length in LF, but traces of gemination in MH; and worst of all, the discrepancy in the meaning: the FU reflexes mean 'five', the Samoyedic ones 'ten'.

The reconstruction proposed here is a modification of the one which was first tentatively put forward by Janhunen (1981.261): it is an attempt to reconcile these difficulties and to explain the labiality of the \*ü pS \*wüt. We may reckon here with a derivate of a stem \*wixi= 'end, last' seen in derivates such as F vii=me=i=nen 'last, final', H vé=g 'end'. The meaning of the pU derivate \*wix=ti would then be (\*)'last digit in counting', with the meaning of the S reflexes ('ten') stemming from counting with both hands.

## [139] \*miini= 'daughter-in-law'

> män'   man'	*e   *e	3↓
LF--\UZOVH/TNKM	H396 U276 J92	

If we assume (matriarchal) patriloccy, this word may perhaps be seen as a derivate of [2] \*mini- 'goes': (\*)'the one who departs [to take up domicile in her future husband's father's household]'.

## [140] \*ini= ~\*ään(n)ä 'big; older ♂ relative'

> äNē   janiy	*e   *e	3↓
LFM-\uzov-/TNQ-	H191 U74 j27	

For the correct Nganasan cognate see the entry in SW.

The western languages point most clearly to a low vowel in this word, but we can perhaps best account for the vocalism of this word by recourse to tongue-height ablaut. See my (forthcoming) paper.

The cacuminal -N- in Eastern and Surgut Ostyak is probably the product of affective gemination; cf. the bifurcation in L (ædne L231 'many', æd'ne 'mother' L232). See also [79] \*munna and [124] 'elbow'.

[141] \*piŋŋi 'tooth' > pän<sup>w</sup>k<sup>w</sup> | P pänk  
-FMC\UZOVH/----

*e   *e	3↓
H526 U382	

See WSV269-270 for the -u- of V Sosva, and compare H fog. The homophonous pV \*peŋ 'head' may have developed from a root with simplex nasal: \*pänV (U365), but the quantity of the vowel (pV < pFU

low vowel) is disturbing.

L has the suspiciously similar, but doubtless unrelated, \*pänä > \*paanee (L891). Proto-Samoyedic had \*timä (SW163), possibly a derivate of the low grade of [292] \*sxi- 'eats'; we would then have \*säxi=mä > \*säämä > \*semä > pS timä.

[142] \*pulk-i- 'bathes'

> päγʷēl-   puwl-	*e   *e	3↓
----\UZOVh/----	H501 U380	

The -o- in Sosva puwl- is regular; see WSV268. The -r- of Hungarian für=d- is problematic.

[143] \*äski- ~ ?\*üskä- 'believes, trusts'

> äyʷēl-   ayt-	*e   *e	3↓
1f--\UZOV-/----	H11 (U76 *e)	

The 3↓ correspondence evidenced by this stem prompts me to suppose a high-vowel alternant \*iskä or even \*üskä. In the latter case, it is tempting to compare this word with the cognates assembled at C127 (L ås'ke 'lap, bosom', F yskä 'breast; cough' and ystävä 'friend' (SKES1865a-1866b), but not Ostyak äpēL, VVj eewēl < \*-p-).

Such a vocalism would help to bridge the gap between this word and its western synonyms L815 \*oskåå, F usko-.

[144] \*äktä- ~ ??\*ikti- 'cuts, chops, hits'

> äyʷēt-   jakt-	*e   *e	3↓
L---\ -zovh/----	H182 U23	

The L forms (L44) and Ze -o- indicate a low vowel, but the ü of H üt- is troublesome, as the UEW admits.

[145] \*küčV= 'knife'

> kcečēy   kasaj	*e   *e	3↓
---C\ --OVH/----	H220 (U142 *e)	

Sammallahti (1988.545) reconstructed \*ä for the first syllable of this word. The C forms point rather to p(F)U \*ü, however: cf., e.g., [122] \*süli. For the adpalatalization in pre-C (\*č > \*c') and the contracted -é- of H kés see now Tálos 1993.393.

[146] \*müči 'prop'

> mäč   KM määs	*e   *e	3↓
-fm-\ -zov-/----	H379 U274 K94	

The long vowel of Vogul KM is secondary. If the forms in -FM-/ belong here we must assume a fairly early \*m- > \*n-, perhaps through association with the n- of the antecedent to F nyte-/lyte- 'scythe-handle', cf. [123].

[147] \*küpsV ~ \*käpsä 'Beinfell'

> koepëL   kot (<*ü<*ew)	*e   *e	3 <sup>1</sup>
-f-c\uzov-/----	H303 (U159 *i, *ü, *ä)	

A body-part designation with high/low ablaut: the low grade is guaranteed by the F evidence, but the P forms (e.g., Z kis) are equivocal because of the possible lengthening and labializing effects of the spirantization of the \*-p-. Exactly the same thing seems to have happened in early pV.

Compare [390a] \*käti 'hand'.

[148] \*wiðä- 'kills'

> wäl-   al-	*e   *e	3 <sup>1</sup>
1---\uzovh/----	H680 (U *e)	

Sammallahti (1988.551) compares L fäl'li- and so reconstructs with \*-l-. But the Permian forms cited by the UEW, e.g. Z vi-, cannot belong here if the original had such an inlaut. It seems more likely that we have here a core lexical innovation with archaic phonology.

[149] \*tiwä 'quiet, calm; deep'

> täγʷen   tawant	*e   *e	3 <sup>1</sup>
LF-C\--ov-/----	H626 U525	

The L word dâvve 'water far out; North' and C tüü= 'out(wards)' show somewhat similar developmental paths in the semantics: the common denominator is not (\*)"out" or (\*)"far" but rather (\*)"deep (into the locus/focus of [indoor or outdoor] activity)". For a parallel meaning-axis cf. the Vogul deictic naal- MK326b 'toward the fire or inner part of the room/toward the shore, downstream', and see Sherwood forthcoming.

[150] \*tirkä 'fir' > Ko teexër | tariγ  
----c\--ov-/----

*e   *e	3 <sup>1</sup>
H648 (U *tVrkkV)	

The reconstruction given here follows Sammallahti 1988.550. Note metathesis only in O; the C form belongs here only if it contains a suffix =kë.

## [151] \*n'ila 'treeslime, sap'

> O n'el   N n'äl' (/a/)	*e   *e	3 <sup>↓</sup>
LFM- \ --OV- / ----	H789 U318	

Affective/onomatopoeic. Cf. UEW329 \*n'VlV(-) 'etwas Schlüpfriges; Baumsaft, Schleim, Splint; schlüpfrig sein, sich ablösen, ablösen, schinden.'

## [152] \*ji(i)\$a= 'skin, body'

> J äl   alpi	*e   *e	3 <sup>↓</sup>
LFMC\ -ZOV- / ----	H20 u573,636	

Tálos (1984.94) is probably correct in proposing an original back vocalism for this word, but \*i(i) is also possible. The UEW thinks that the Ostyak word cannot be separated from äLë 'cover, roof'; see [153] \*üli 'top, surface'.

## [153] \*üli= 'top, surface'

> älë   ala	*e   *e	3 <sup>↓</sup>
LFMC\ UZOV- / TNQm	H25 (U573 *wilä) J26	

The UEW reconstructs with \*w- to explain the nasal initials in all S cognates save Selqup. Janhunen's idea is better: the nasals initial in these words derive, via fausse coupe, from an sG \*-n on a preceding noun in a NOUN + LOCALNOUN noun phrase. A further example might be pS \*n'er@ 'Spitze, Ende' SW110 (via a parallel mis-analysis) from pU \*-n + \*iδi, cf. \*iδi (~\*ääδä) [382] 'fore/far', if we could but explain why pU \*i > pS \*e in this sequence.

## [154] \*tiwä- 'fills, stuffs full' ~ \*täwi 'full'

> täk <sup>w</sup> i-   tay	*e   *e	3 <sup>↓</sup>
LF-- \ --OVH / ----	H619 (U520 *tekV-)	

There is no overriding reason to set up pFU \*-k-. The O forms with -k- are products of affective gemination or strengthening, with \*γγ > k, as at morpheme boundaries. See DEWOS1406-7. The western forms to be compared here include the täy= of the F denominal derivate täy=tä- 'fills' and L dievvâ- 'full', both from low-grade \*täwi, and perhaps F tyty- 'considers X to be (more than) enough, is satisfied', tyty- 'gets stuck; evaporates' and tyty 'weir' (SKES1468ab) from high-grade \*tiwä. High-grade \*tiwä may also be present in F verbal derivates such as työntä- (UEW s.v.); the high grade is certainly indicated by the correspondence within OU. Hungarian tűz- 'sticks' and tű 'needle' do not point specifically to either high or low grade.

See also [185] \*täw=δ V- 'in a full state' 4<sup>11</sup>.

[155] \*piintä- 'closes, fastens; covers'

> pänt-   pant-	*e   *e	3 <sup>1</sup>
-----\UZOVH/-----	H525 (371 *e)	

The P reflexes indicate a low vowel; H fēd- should come only from a high vowel.

If the original focus of the meaning was 'closes' we may have here a nasalized variant of \*pi(i)tä- 'holds (firmly)'. For the sense-development cf. Latin FIRMARE > French fermer.

If on the other hand the original semantic core was 'covers', the \*-n- in this root may be of the same origin as the \*-δ- of [57] \*piδ(i)= 'high'. We would then have a derivate: \*piin=tä-. For intervocalic \*-n- as a source of \*δ, see my forthcoming paper. The meaning-axis would then be (\*)'is high ~ covers/conceals'. This semantic junction may underlie the following three pairs of proto-Indo-European roots traditionally held to be homophonic synonyms: (1) \*kel- (P544/553), cf. English hill ~ hell, Latin celare/color (EMA111b/ 133a) ~ celsus/collis (EMA111a/132a); (2) \*bhergh- (P140/145) > English barrow ~ bury, German Burg ~ bergen; and (3) \*wer- (P1151 and 1160) > English war=t ~ weir. In the light of Latin color < \*kel= and Sanskrit varNa- < \*wer=, both 'colour' < (\*)'covering, concealing layer; outward appearance' we may perhaps also compare F pinta 'surface' and its cognates; note particularly U ped (pal) 'äußere (Seite)', U730.

The F verbs collected under piinty- at SKES547b offer a further point of departure into this area.

[156] \*s'iδ'i(=mV) ~\*s'ääδä'=mä 'eye/kidney'

> säm   sam	*e   *e	3 <sup>1</sup>
LFMC\UZOVH/TNQM	H592 U479 J132	

(1) With regard to 'eye': the tongue-height of the vowel in what I take to be a derivational suffix is not as certain as the western witnesses (L čál'bme, F silmä) would make it seem. See the SW s.v.

For another body-part designation built with \*=mV, cf. [304] 'cheek'.

The -j- of the Q reflex saji, the only evidence for the underived state of this root, points to an intervocalic \*-δ'- rather than \*-l-.

In pFU \*-δ'- > \*-δ- by dissimilation to the initial \*s'- in pFU. Cf. [15] 'heart'.

Tálos is probably correct in his speculation that the second-syllable -ë- of H szémë- was originally in the third syllable (1993.392).

(2) With regard to 'kidney': the word for 'kidney' reconstructed as \*s'eδ'mä (U472, with Ostyak DN siimä, cf. KT859; this form presumably from a derived \*siimä=i) may reflect the low grade of the same word; for the meaning-axis 'eye~kidney' cf. Bergsland 1986.71-2 (Central Siberian Yupik) and Matisoff 1978.198, 233 (Tibeto-Burman, Austronesian and Austroasiatic).

[157] \*tiki=tV 'fire'

> teγʷët   P tååwt	*e   *e > *ää?	3↓?
----\--OVH/----	H631 U895	

The word has no exact matches beyond Ugric. But if pV originally had a short (low) vowel (cf. WSV 180; Steinitz' \*ä = Honti's \*ää, Honti 1982.26) we may propose that the word is a euphemistic circumlocution derived from the FU root \*tiki-/\*tiγi- (U519 \*e) 'tun, machen, legen, setzen, stellen'. The etymon would then be (\*)'the thing which one makes/builds'. (Think here also of F työ 'work'; for \*-k- ~ \*-γ- see Steinitz 1952.19-20.) The verbs occurring in the expression 'makes/lays/builds/lights a fire' in the present-day Ugric language are of different and diverse origins (H rak-, O Vax weer-, V palt-, pelëmt-). Notice that such a reconstruction agrees, mutatis mutandis, with most of Honti's (1985.154-5) reasoning in connection with this word. It is much less likely that the root could be a loan from an Indo-European dialect; in such a scenario one would compare not \*dheE-, but \*dhegʷh-'anzünden' (P240).

[158] \*miγt- 'casts/throws (net)'

> mäγʷët-   LU mäxt-	*e   *e	3↓
----\--OVH/----	H385 (u868 *ä)	

The problem with this comparison is morphosyntactic, not phonological. The putative Hungarian pendant mét is attested only as the first member of N+N compounds such as mét+háló '(dragnet)'.

### 3.2 O|V \*ë|\*ë

[159] \*puna- ~ \*puni- 'plaits, twines, spins'

> ponël-   pon-	*ë   *ë	3↓
LFMC\UZOVH/TNQ-	H519 U402 J113	

Janhunen (1981.256-258) posited parallel forms for this root in order to account for the \*@ of pS. See also [98] \*pura.

I explore possible connections of \*puna- ~ \*puni- 'plaits, twines, spins' with UEW347 \*pað V 'weir' in a forthcoming paper.

[160] \*uux(=)a 'stream, current'

> aγ <sup>w</sup>   ow	*ë   *ë	3↓
LF---\---ov-/----	H8 (U544 *unja)	

The vocalic profile proposed in this reconstruction is the same as that of the UEW: it attempts to cover L uvve. I propose a morpheme boundary because I am part-convinced by Janhunen's (1981.260) speculation concerning the relevance of ??\*u(u)xii- ~ \*i(i)xii- 'swims' (UEW542 \*uje-, Janhunen 1981.260-261). See also [363] 'way; channel, isthmus'.

[161] \*kura= '(swampy or damp place), mud'

> kor   xori	*ë   *ë	3↓
-F---\---ov-/----	H307 PS344	

The equation is Sammallahti's; SKES244a offers three other possibilites, including borrowing from Germanic (e.g. an antecedent of English gore).

[162] \*puča- 'gets wet, soaks'

> pač- ~ poč-   pos-	*i~*ë   *ë	3↓
----\U-ov-/----	H482 (U388 *o)	

[163] \*pu(n)s'a- 'presses out (by squeezing)' >

pos-   pos-	*ë   *ë	3↓
L--C\--zov-/----	H543 U404	

In OU this root came to mean 'washes; milks; snites'. Note the derivate \*puc'V=rV- (see my 1990 paper), with pendants in  
-F---\UZO-H/----

Compare [101] \*pus'ka 'diarrhea, feces' (2↓).

[164] \*c'urkV 'cutting tool'

> DN t'oxér Ni -uu-   N s'oxri	*ë ? *åå   *ë	3↓?
L---\--ov-/----	U39	

Not a very useful etymology because it is so sparsely attested. If the original vowel in Ostyak was \*åå the word should be assigned to correspondence 4↓↓.

[165] \*kiira- 'angry, swears'

> korëm-   LU k <sup>w</sup> arkat-	*ë~i   *ë	3↓
1fm-\---ovh/----	H308 (U220 *u)	

Ostyak Trj korëm- requires \*u. The first-syllable -a- of H harag 'anger' can come from either \*i or \*u.

For F kir=o 'Fluch' and its M and L analogues (L323) to belong here we must assume either \*i > \*i (> \*ë, \*u) or its reverse. Cf. [166] \*pilna 'hemp, flax'.

[166] \*pilna= 'hemp, flax'

> polën   ponal	*ë   *ë	3 <sup>1</sup>
-F--\--ov-/----	H516 (U370 *e, *o)	

F pella=va (SKES514b) probably preserves the original front first-syllable vocalism.

[167] \*kit/δa= 'gums'

> kotëmnëŋ   LO xolëŋka	*ë   *ë	3 <sup>1</sup>
-F--\--ov-/----	H260 (U130 *a)	

For the etymology to work we need \*-δ- (for the Vogul forms) and \*-t- (for the Ostyak). Presumably affective, possibly with taboo distortion.

[168] \*pič/c'V 'smoke; dust'

> Ni puusëŋ   posim T -o-	*ë   *ë	3 <sup>1</sup>
-----\--OVH/----	H544 U879	

Sound-descriptive. The back vocalism of the OU pendants may be due to the influence of the initial \*p-, as the UEW suggests. It is perhaps just as likely that they descend from an A-stem \*pic'a-, or that they reflect a heavy isotope.

[169] \*čuk&či- ~ \*c'ik&c'i= '(berry)'

> čopčëγ   sosıγ	*ë   *ë	3 <sup>1</sup>
-FM-\--ov-/----	H112 (U46 *c'Vkc'V=)	

Affective, probably reduplicative, and with front/back palatal/cacuminal isotopes; in short, a typical berry-designation. The Ostyak -p- is the product of playful or taboo substitution. See [170] \*mu(u)ra 'berry'. It is intriguing that the UEW sets up another berry-designation with the shape \*c'Vkc'V=tVrV; Keresztes assigns the M pendants to either protoform (K457).

[170] \*mu(u)ra= '(berry)'

> morëŋk   morax	*ë   *ë	3 <sup>1</sup>
-F--\--ZOV-/----	H409 U287	

The FU reflexes are regular enough, but there are so many rival and

resemblant reconstructions for berry designations that all must be suspect until a detailed sifting is undertaken (we have the beginning of such an undertaking in Koponen 1991). Note that the UEW sets up four berry-designations with initial \*m-, first-syllable back vowel, and medial apical:

U287 *mura	-F---\--ZOV- / -----
U279 *mol'/δ'V	---c\UZO-H/ -----
U264 *marja	LFMC\---ov- / -----
U265 *ma/otV	---c\----- / --q-

#### 4. Correspondence-type 4<sub>L</sub><sub>L</sub>: pO short low vowel = pV long low vowel.

The great majority (52) of the following sixty-two stems ([171] - [232]) come from pFU non-ablauting low vowels. Only one word, [195] \*pälä, is clearly attested in Samoyedic.

In six cases, we may reckon with low/high ablaut: the body-part designations [177] 'marrow', [201] 'body cavity', and [207] 'fat'; the verb [213] meaning 'is, lives'; a verb/noun pair [228] meaning 'hunts for X; hunting party'; and an affective word [219] meaning 'moist heat'. Three problematic cases — the kinship-terms [202] and [224], and perhaps [230] — point to a high vowel in pre-OU. A word [232] meaning 'bait' may be built to an ablauted grade of [292] 'eats'.

##### 4.1 O|V \*e|\*ää

###### [171] \*wäki 'strength, power'

> wœγ <sup>w</sup>   waaγ	*e   *ää	4 <sub>L</sub> <sub>L</sub>
LFMC\UZOvh/ -----	H672 U563	

The Hungarian local noun (vele-, véle-) and instrumental suffix -vAl probably belong here, contrary to the opinion expressed by the UEW.

###### [172] \*jänkV 'bog'

> jänk <sup>w</sup>   LO jaanjkëlm	*e   *ää	4 <sub>L</sub> <sub>L</sub>
L---\--zov- / -----	H196 U93	

The L reflexes (L262) point to a low vowel in the second syllable of this word.

[173] \*märi 'period of time'

> märë   KU mœœr	*e   *ää	4 <sup>11</sup>
----\--OVH/----	H404 U871	

Honti's KU Vogul œœ = Sammallahti's (1988.506) öä. The O märë 'period of time' is almost certainly the same word as märë 'Ausdauer im Laufen; Strecke, die ein Rentier ohne auszuruhren laufen kann'; see DEWOS955-6. The etymon would then be (\*)'pressed, narrowed; stretch(ed to the limit)'. See also, therefore, [67] \*mirV- 'becomes stiff'. For the meaning-axis cf. E |stretch| 'exercises X beyond normal limits; period of time; either of the straight sides of a racecourse'.

[174] \*s'än(k)i- 'hits, breaks'

> sänkʷ-   VN saank=ëp	*e   *ää	4 <sup>11</sup>
--m-\UZOVH/----	H598 u31, u472	

The reconstructed medial \*-ŋ(k)- is necessary only if we wish to capture both M intransitive s'ive- and transitive/causative s'in'd'e- 'breaks (off)' = H széd- 'picks'. The unexpected -v- of M s'ive- (we expect \*-ŋ- > -j- in a front-vocalic word) could be due to dissimilation from the palatalized initial: \*s'-ŋ- > \*s'-j- > \*s'-w-.

For a resemblant synonym, see [269] \*c'ärki- 'breaks; hurts'.

[175] \*äKi 'daughter'

> äγʷi   aayi	*e   *ää	4 <sup>11</sup>
----\--OVH/----	H7 U835	

The H reflex is possibly the i- of i-a&fi-a 'offspring of X'. Perhaps not only the morphological velarity of this i- (UEW s.v.) but also its tongue-height are due to analogical attraction to the form with which it invariably occurs, fi-a (\*)'son < offspring of X', for which see [18] \*pij=ka 1<sub>T</sub>.

It seems more likely either that H i- is playful invention, a variation on fi- (cf. EWU597), or the reverse: that fi- and its cognates are p-initial reduplicatives to an antecedent to \*äKi. Cf. also [235] 'ovine' and [197] 'reindeer calf'.

[176] *käri= '(fish); ? Acipenser'	> käri   kaaraj ----\u-ov-/----	*e   *ää H305 U139	4 <sup>11</sup>
------------------------------------	------------------------------------	-----------------------	-----------------

The U form is poorly attested; it presumably contained a derivational suffix.

[177] *wäδi= ~ *wiδi= 'marrow'	> wäläm   waaläm LFMC\UZOVH/----	*e   *ää H663 (U572 *i)	4 <sup>11</sup>
--------------------------------	-------------------------------------	----------------------------	-----------------

This body-part designation may have had high/low ablaut. The Z and H reflexes are ambiguous, the U unclear. The western reflexes (particularly L \*@: see L4) point to an initial high vowel, probably \*ü- (LF) or \*wi- (M; C?). The \*ü of LF may be anticipatory assimilation, as suggested by Collinder (CG459); we would then have to reckon with \*wiδimi > \*wiδümi > \*wüδümi or, if the formation with final ü (as in F yty) is old, with \*wiδi=w > \*wiδü > \*wüδü.

[178] *läppi- 'enters; has room inside X'	> läp-   laap- ----\--OVH/----	*e   *ää H365 U863	4 <sup>11</sup>
---	-----------------------------------	-----------------------	-----------------

With the extremely rare initial sequence \*l + low vowel; note the early-attested H variant věp-.

[179] *mäli= 'warm' > mälējk   maaltip	-----\--OVH/----	*e   *ää H388 U868	4 <sup>11</sup>
--	------------------	-----------------------	-----------------

[180] *käsV 'dew, moisture' > kälē   P kååt'ēl'	-f--\--ov-/----	*e   *ää H225 D620 SKES168a	4 <sup>11</sup>
---	-----------------	--------------------------------	-----------------

F kasi, sG kase- 'dew' with its derivates kast=u-, kast=eq looks old. There are two ways it could be connected with the OU words given here: (1) it represents a heavy isotope of what was presumably an affective word (affect is phonologically manifest in pFP \*l'upša 'dew' UEW261; note also the highly irregular correspondences of pFU \*pVčV 'Reif, Tau' UEW377); (2) it underwent the well-known shift \*-ä-ä > -a-e as in [190] \*tälwä 'winter' > F talve-.

[181] *käärä= > 'bundle, ball'	> kärē   kʷaarëx, kʷaarëk -FM-\--ov-/----	*e   *ää H311 (U147 *e)	4 <sup>11</sup>
--------------------------------	--	----------------------------	-----------------

A nominal formation which is either etymologically connected (via high/low ablaut) with the verb [385] \*kirwä- 'dodges; ? makes a (quick)

turn', see 8<sub>T</sub> H309, or which became crossed with that verb in the separate languages.

[182] *kaδ'wa 'female' > kœjëγ   kaal'	*e   *ää	4 <sub>11</sub>
L---\--OVH/-nqm	H226 U116 j66	

With what I have tried to show (1992.25) is regular fronting of \*a >> ö in H hölgy 'stoat; bride; lady'.

The cluster \*-δ'w- suggests a morpheme boundary. If the Samoyedic forms belong here, we have Nasalschwankung in the derivational suffix(es) pFU =\*wA ~ pS \*=mA.

[183] *s'ajii= 'nit' > sänëγ   saaniγ	*e   *ää	4 <sub>11</sub>
LFMC\UZOV-/----	H595 (U770: FP)	

The UEW reconstructs a form \*s'ajVrV to account for the reflexes from L to Z. But the OU forms may also be accommodated if we segment the last syllable of this \*s'ajVrV, interpreting it as a nominalizer especially frequent in the building of animal designations. We then may depart from \*s'ajii(=w)=nV for the OU forms, and from \*s'ajii(=)w=r̄i for the westernmost forms. Flanked by palatals, the \*-a- of \*s'ajii= fronted to \*-ä- early; compare also [192] \*täji= 'louse', which may have exerted analogical pressure from the lexical side. The development in L ran as follows: \*s'ajii(=)w=r̄i > \*s'äjiwri > \*s'ääjiwri > \*s'eejwri > \*c'iijwri > \*c'iirV= L143.

The cacuminal -N- in Ostyak reflexes may reflect an earlier cluster \*-wn-.

[184] *käw(i)δi 'rope'		
> Ni keetë   kʷaaliγ	*e   *ää	4 <sub>11</sub>
LF-c\UZOV-/----	H256 (U135 *kewδe)	

The -ö- of the Fennic reflexes may be seen as regular if we assume \*ä in an open syllable, i.e. F köyte- < \*keüte- < \*käwiδi; compare [207] \*wajī > F voi.

[185] *täw=δi= full'		
> täl   taayl	*e   *ää	4 <sub>11</sub>
1F-c\UZOVH/----	H622 U518	

I assume a morpheme boundary in this word because I find it difficult not to connect it with [154] \*tiwä- ~ \*täwi 'fills/full' 3<sub>1</sub>.

If the L pendant, a verb, is not a loan from F (L1249) it must have had \*A in the second syllable. U|Z o|e also points to \*ä\_ä-; cf. [190] 'winter'.

Resemblant and somewhat synonymous reconstructed forms are UEW520 \*temV- 'voll; stopfen, füllen', with suspect m in the H reflex töm- 'stuffs' (< \*-lm- ?), and UEW521 \*teppV 'dicht' with suspect \*-pp- (? <\*-lp- < \*-δp-).

[186] \*säli(=kV)- 'sits/puts in boat'

> läl-, liil=t-   taal-	*e   *ää	411
-----\ -zovH / tnq-	H138 U434 j163	

The Ostyak derived forms with \*ii are presumably secondary.

The geminate -ll- of H ell- is best explained as coming from \*-ly-; this would presuppose a form derived with a deverbal verb-forming suffix \*=kV- as seen in F kulke-. The Samoyedic forms listed by the UEW might perhaps belong here if we were to assume such a formation built to a long-vowel variant of this stem, with development along the lines of pU \*sääl=ki- > p-pS \*telki- > pS \*tij-.

[187] \*šärä- 'arrives, attains'

> läremt-   taarat-	*e   *ää	411
-----\ -zovH / -----	H156 U497	

The reflexes in OU are all derivates: O Trj lärë=mt- 'spreads X out', lär=päylë- 'X (e.g. waves) spreads out', V So taar=at- 'releases, emits'. The simplex root is attested only in H ér- 'reaches, arrives', now classified (EWU327) as possibly a (very old) loan from Turkic. It is likely that we have here to deal with an étymologie croisée. Alongside the complexities of the distribution of Hungarian dialect variants with i-, there is the double representation seen in é-variants such as ér=int- 'grazes, touches upon', ér=ez- 'feels', ér=dekel- 'interests', ér.t- 'understands' as opposed to e-variants such as ere=d- 'arises, has its origin', ere=sz=t- 'causes to rise/fall, releases'.

Possibly also identical with H ér ~ ere- 'stream' = U šur = Z šor < \*šärV, UEW499.

V sartit- 'berühren' and C šuranj- belong to different and separate etymologies; see UEW498.

[188] \*jäni '(newly-formed?) ice'

> jäŋkʷ   jaŋk	*e   *ää	411
LFMC \ UZOVH / -----	H197 U93	

It is suggestive that the words for 'ice' are a FU innovation; another example, perhaps, is \*c'VkV 'Treibeis' (UEW29).

Ostyak developed a taboo replacement for (\*)'water' from its own

innovated \*i-grade of this root: O Trj jeŋk 'water'. See also [189] \*jäŋ=tV- 'becomes stiff, congeals' and [172] \*jäŋ(=)kä 'bog, swampy place' perhaps < (\*)'place where ice forms readily/earliest (because water is relatively non-turbulent and shallow)'.

[189] \*jäŋ=tV- 'stiffens, congeals'

> J jäntēl   jaant-	*(i~)*e   *ää	4A <sup>±</sup>
----\ -ZOV- / ----	H193 (U92 *jäntV-)	

Reconstructed here with \*-ŋt- because I find it difficult to believe that this word is unconnected with [188] \*jäŋi 'ice'.

The western Ostyak forms point to pO \*i, which I take to be a relict of pO \*e~\*i.

The O derivates mean 'jelly (of fish, meat); congelation (of blood, fat)'; the V verb refers to the congealing of fat as well as the freezing of water.

[190] \*tälwä 'winter'

> tölëγ   taal +	*i < *e   *ää~*ii	4A <sup>±?</sup>
LFMC\UZOVH/ ----	H635 U516	

With early \*e > \*i in pO, cf. [220] \*kääc'ä 'barbel', [219] \*čin̥ki '(moist) heat'.

[191] \*särä 'vein; root; fibre'

> lär   taar	*e   *ää	4 <sup>±</sup>
---C\U-OVH/ ----	H155 U437	

The original meaning as reconstructed wants precision.

On the basis of evidence outside ObUgrian, the following Ostyak words with pO \*e also came from pU \*ä-ä: (UEW469, L115) O Tj säč 'Wassersteigen' = L čacce 'water', (UEW 242, L220) O Trj läp=ëtnë 'milt' = L daw'de.

[192] \*täji= 'louse'

> täγʷtäm   taakäm	*e   *ää	4 <sup>±</sup>
LF-C\UZOVH/ ----	H634 U515	

In the -k'ke of L1251 dik'ke we may have a pL suffix \*=kkA appended to a bisyllabic root, i.e. \*täji=kkA (CFVG392). Such a shape, with open first syllable, makes more plausible the early lengthening (> \*tääji=) and rising (> \*teeji > \*tiji=) necessary to explain the first syllable vocalism (pL \*i < \*ii, with the \*i staying high to the left of \*j; compare the blocking of \*u > \*o to the left of \*w). The i of the C forms presumably has a similar background. In OVH we have reflexes of a suffix-sequence

\*=k=t=m:

O	tä	γ <sup>w</sup>	të	m
V	taa	k	ë	m
H	te		tü	ü

H -t- < \*-γt- is regular; V -k- from \*-kt- is unexpected.

[193] \*pä(ä)r(=)tä 'board'

> pärt   paart	*e   *ää	4 <sup>11</sup>
-----\UZOV-/-----	H540 U374	

Note also UEW364 \*pälV 'Brett'. For a possible heavy isotope see [227] \*paarawa 'raft'.

[194] \*mäxli=w= 'breast'

> mäγ <sup>w</sup> el   maayl	*e   *ää	4 <sup>11</sup>
LFMC\U-OVH/-----	H383 U267	
LFM-\UZ---/-----	(U702 *mele, *meele)	

The UEW sets up two unconnected roots: UEW267 \*mälke/\*mälγe 'Brust' and U702 \*mele/\*meele 'Sinn, Gemüt, Verstand, Vernunft'. The shape of the reconstruction proposed here attempts to reconcile both sets of reflexes. Note that the supposed anomaly of U i (UEW267) vanishes if we depart from \*äx (> FP "\*ee"; see Rédei 1988.374).

The -γ- of the OU forms would then derive from an original \*w after metathesis: \*mäxli=w > \*mäwlV > \*meylV.

Forms such as L666 miel'gâ, H mell would derive from \*mäl(w)=ki. The voicelessness of the -k- in Me mel'ke, and of that stop and its preceding lateral fricative in Mm, show that we are dealing here with a relatively recent formant, as in Me er'ke 'lake' < \*järwV= UEW633. Contrast the much older \*=ka of [97] \*tuxl=ka 'feather' > M tolga.

[195] \*pälä 'one of two halves; spouse'

> pälëk   paal	*e   *ää	4 <sup>11</sup>
LFMC\UZOVH/TNQM	H508 U362 J120	

This word became entangled, in various daughter languages, with the following item:

\*pä(ä)xli '(outer) edge; doorpost'

-FM-\U---H/TNqm	U369 J124
-----------------	-----------

The distinction between the two words is perhaps best maintained in Samoyedic, where the distance between the original meanings grew: the meaning of \*pä(ä)xli developed into 'das Äussere, Draussenraum'.

For the meaning-axis 'door(-post)~'outside' cf. Latin *[foris/forees]*; for 'edge'~'outside' cf. H272 7<sub>T</sub>, H275 8A<sub>T-T</sub>.

Three body-part designations may also belong here. The words meaning 'ear' which are adduced by SKES538 in this connection may in fact be derivates of \*pä(ä)xli, but the details are still unclear. See [65] \*pääläjä ~\*pili 'ear', and, for the shape of this root, compare [16] \*n('ääl('ä) 'four'. Two further derivates of \*pä(ä)xli are: (1) \*päl=kä 'thumb' > L-M-\UZ---/tnq (U363 j123; note also OU [262] \*pääñ 'finger; thumb') and (2) \*päl'=kä 'leg' > --M-\---V-/---- (U364; the =ka=t of V paal'kat is additional derivational material). The semasiological point of departure would be (\*)"projecting lateral body-part"; cf. Greek *[antíxeir]* 'thumb' (Buck 1949.240). The \*-l- of \*päl'=kä is either a trace of earlier bisyllabicity or, more likely, wilful taboo/play-motivated distortion. Or: \*pälä and \*pä(ä)xli go back to the same root, perhaps a deictic. Such a hypothesis furnishes a further challenge to Uralic reconstruction.

[196] \*n'äxli- 'swallows'

> n'äl-   KU n'aalëj-	*e   *ää	4 <sup>1</sup>
LFMC\UZOVH/----	H454 (U315 *e, *ee)	

Not only the Enets form cited as irregular by the UEW but also the Nenets and Nganasan forms cannot belong here; Janhunen (1992.240) reconstructs \*n'@lt@- for northern Samoyedic.

See also the nomen agentis/?actionis derived from this root, [277]  
\*n'äxl=mä 'tongue, mouth; drooling'

[197] \*paa/ääčä 'reindeer(calf)'

> V peečëγ   paasiγ	*e   *ää	4 <sup>11</sup>
LF-C\--OV-/----	H483 U387	

F forms such as Veps pedr(a-), F peura 'wild reindeer' are probably derivates of this root. For the -r- of F poro see SKES604b, echoed at UEW388.

The OU forms (and F peura etc.) descend from a light (\*ää), F poro and the L forms (L967) from a heavy (\*aa) isotope; the dialect correspondences in C are ambiguous. A similar sort of ambiguity may be seen in the antecedents to the somewhat synonymous, somewhat homophonous [235] \*aači ~ \*uuči '(ovine)', q.v. Note the distribution:

L	Fi	Mm	C KB	U	Z	O Vax	V So	H	
---	---	---	---	---	---	aač	åås	----	/
---	uuhi	uča	ëž γa	iž	iž	---	---	----	/
---	peura	---	---	---	---	peečęγ	paasiy	----	/
boazo	poro	---	pučę?	---	---	---	---	----	/
									< *aači < *uuči < *pääč=
									< *paača

The absence of a Hungarian pendant is striking.

One might perhaps dare to suggest that these words all originate in animal-calling forms of a playful/taboo reduplicative nature. We might then reconstruct something like \*aačV&p--aačV, with prefixed \*p-- in the second member of the reduplicative compound. See also [175] \*äKi 'daughter'.

#### [198] \*pääδ/IV- 'pricks'

> päl-   peel-	*e   *ii (? < *ää)	4 <sup>II</sup> ?
1-m- \ --ov- / ----	H488 (U371 *pelV-)	

With double rotation in pV.

Either L bæδ δâ- or M pel'e- belongs here, but not both. We know that pU \*-δ(')- can give M -l(')-, but this is under extraordinary circumstances (cf. [350] \*s'iīδ(')~\*s'aaδ(')=ka, [156] \*s'iδ'i(=mV) ? ~\*s'ääδä'=mä).

#### 4.2 O|V \*ë|\*aa

##### [199] \*paδ'a(-) ~ pal'a(-) 'ice crust'

> poj   påål'-	*ë   *aa	4 <sup>II</sup>
LFM- \ --OVH / ----	H489 U352	

The western languages point to \*-l'-; O points to \*-δ'-; V and H are ambiguous. Cf. [52] 'spits'. If the ablaut occurring in O Trj (poj ~ pajV-) is old, we must reckon with \*i ~ \*ë in pO.

##### [200] \*aaδi=mii 'sleeping-tent; canopy' >

olëp   LO oomël	*ë   *aa	4 <sup>II</sup>
-F-- \ UZOV- / ----	H5 (U541 *u)	

With early pre-Fennic uu < \*oo < \*aa before non-obstruent \*δ (cf. Tálos rule 5b, 1987.76). The vowel correspondence in Permian (U|Z i|o) is typical of words with original low vowels. Another derivate is [271]

\*aδa=mī 'sleep; dream' (with short \*a), q.v.; for the root, see [272]  
 \*aaδa- 'sleeps'.

[201] \*amtī= ~ \*umtī 'cavity; hole'

> ontēr | LO oontēr  
 LFM- \u-OVH / ----

\*ē | \*aa  
 H40 U338

411

The evidence in F all points clearly to \*u. But proto-Vogul \*aa points to an earlier \*a-grade in this word, as does the possible Udmurt pendant udur 'Öffnung des Bienenstockes'. The L and M reflexes are ambiguous in this regard, since these languages have partially conflated first-syllable \*a and \*u in I-stems.

Ostyak also has the underived root: note the close semantic match of O Trj ont 'Bauchhöhle (worin die Eingeweide liegen)' = L1439 vuow'dâ 'rinta(-ontelo), the cavity inside an animal's body (of the chest and abdomen together)'.

Strange though it seems, there appears to have been a near-synonym with \*-ŋ- (UEW341); this yielded a homophonous form in L, vuow'dâ 'hollow in a tree; nesting-house (for birds) made from a hollow tree' (Korhonen 1981.187), and Ostyak Trj anʷēt 'hole (in a tree, a tooth etc.)'

DEWOS144. Both reconstructed clusters, \*-mt- and \*-ŋt-, look archaic. It is unclear whether we have here to deal with (1) semantic bifurcation, i.e. a split due to polysemy (or taboo distortion of hunter's terminology), or (2) with a semantic merger. Since Finnish uu 'acquatic bird's nest made in a hollow tree, man-made bird's nest made from a hollow tree' can come from \*aanjī, the derived synonyms uutu and uuttu (SKES1557b) could also possibly belong with this latter word.

[202] \*ina+iippi 'mother/father-i-law'

> ontēp | åänip  
 -F---\---OVH / TNkm

\*ē | \*aa  
 H42 U9, J24

411

Janhunen 1981.227-8 daringly and quite convincingly associates the -o- of F anoppi and the -i- of the V reflex with a pU sequence \*aj < \*a+i. The components of this pU compound were \*ina 'mother-in-law', a stem which is attested elsewhere only in derived L forms (L1442 \*vooneem; note also the reinterpretation of signal structure indicated by the =tēp in Ostyak), and [392] \*iippi 'father-in-law'.

If H nap(-)a belongs here, it is probable that its aphaeresis was due to lack of stress (< \*inäppē); the suggestion made at EWU1015b — fausse coupe — is less likely at such an early, pre-article, stage of pre-Hungarian.

## [203] \*sar=s'i 'span'

> sor=t   tååras ----c\ --OVH / ----	*ë   *aa H165 (U448 *o)	4 <sup>11</sup>
---	----------------------------	-----------------

With assimilation \*s- > \*s'- (> \*s-) in pre-Ostyak. Probably derived:

(1) The word reconstructed as \*sorme 'finger' (U365) to account for L suor'bmâ, F sorme-, M sor could in fact be a derivation from the same root: \*sar(i)=mî > \*saarmî > \*soormi > \*sormi, with normal rotation (lengthening, rounding, and raising) of the original low vowel. Cf. [207] \*wajî > F voi and Tálos 1987.77-8.

(2) A different explanation would derive the L and F words from a high grade of the same root, i.e. \*sur=mî, with early \*u > \*a (to the left of a cluster which straddles a morpheme boundary?) in pre-L as in \*kur=pi 'burnt-out area' > \*karpi > \*korpi > \*koorpî (L535) = F korpi 'backwoods', korve=nta- 'burns at the surface'; see also UEW186 \*korpe- 'brennen, verbrannt werden, versengt werden' and \*korta- 'sengen, brennen'.

## [204] \*wari 'wooded hill; (coniferous) wood'

> wor   wårar ----\UZOVH / ----	*ë   *aa H705 (U571 *ë, *oo)	4 <sup>11</sup>
------------------------------------	---------------------------------	-----------------

With developments in Permian (U|Z ë|i) parallel to those of \*panči 'tail': see UEW353 \*pa/o(n)čV > U|Z biž|bëž, with O|V \*i~ë|\*aa. Alongside H orr '1055: 'Gipfel; nose' we may also place H var(a-) 'scab; crust on skin'; for the meaning-axis compare English |war=t|, Latin |ver=ruu=ca| (EM725a), both from pIE formations (\*wer=d, \*wer=s) meaning 'high place' P1151.

If L1357 varre = F vaara < \*wärä (see SKES1580b) is correct, we are dealing with a light isotope of \*wari, but with unexplained deviant second-syllable vocalism. In that case, Finnish vuore- 'mountain, hill' is probably a loan from pre-L \*warë < \*wärä; note the restricted distribution of the word in Fennic (SKES1821) and cf. Tálos 1987.77-8.

On the other hand it might be possible to identify L varre with H707 'Bergrücken' > wor | ur. The trajectory for the L would be \*wiïra > \*wira > \*wara > \*wåree > \*waree > L1357 \*waaree. The chief difficulty of this equation is accounting for the trajectory to OU: \*wiïra > \*wira > \*wurë? At least in OU, this word (or these words?) became contaminated with another word which meant 'side, edge; direction'; see [410] \*warV.

## [205] \*pa(a)rV= 'fish roe'

> DN puurë   påår ----\ --ov- / ----	*ë   *aa H532 U407	4 <sup>11</sup>
---	-----------------------	-----------------

The Selqup forms cited by the UEW cannot belong here if we depart from a low vowel.

[206] \*pa(n)či '(? especially bird's) tail'

> poč; V pooč | P ponš  
---C\UZOV-/----

\*i~\*ë | \*aa  
H522 U353 (also \*o)

4A<sup>±</sup>

A hunter's term? Taboo; note the meanings in eastern Ostyak: Vax 'heel', Vasjugan 'nape'.

With secondary ablaut in pO. For the Nasalschwankung, see the word with which this is either related or crossed: [324] \*pa(n)čV- 'opens, is open' (compare the contamination in Russian kr-y-lo: Fassmer s.v.).

A possible further connection is with \*paač=ka (U389 \*počka) 'Schenkel, Hinterfuss', with reflexes in LFM.

[207] \*wī(i)ji ~ \*wajī 'fat'

> woj | wåāj  
LFMC\UZOVH/----

\*ë | \*aa  
H666 U578

4<sup>±</sup>

A body-part designation with high/low ablaut. The vowel correspondence in Permian (U|Z ē|i) is the reverse of that expected. The UEW blames the \*-j-, but without making explicit the details of the putative effect of this segment. We should perhaps compare the development of the vowels in [362] \*piis'V= 'mitten', a word with a phonologically similar consonant frame.

The OU and H pendants are best explained as originating from the low grade (\*wiijī would give H \*vij, and probably O Trj \*waaj, V Sosva \*waaj).

[208] \*lVs'=kV- 'is released'

> Ni läåsxij- Vj -a- | los'=, läås'=  
1Fm-\UZOV-/----

\*i~\*ë | \*ë~\*aa  
H367 D854

4A<sup>±</sup>

Among the V pendants are the verbal and adjectival derivates meaning 'becomes empty, roomy' (läås'=xat-) and 'loose, wide, ample' (los'=it), MK168b-269a. The L forms cited by the UEW (see now L630) belong here only if we take them to represent a different (? transitive) formation, made with \*=tA and not \*=kI, to the same CVC root: \*las'=ta- > pL \*looštee-. The M forms require further examination.

The P forms (UZ ledz'-) are either the reflexes of a light isotope or else they show the results of early secondary fronting because of the \*-s'- (UEW233).

## [209] \*kač= 'ant'

> kačŋi (VVj!)   xåås+woj -----\---ov-/----	*i~*ë   *aa H221 (U192 *u)	4A <sup>II</sup>
--	-------------------------------	------------------

ObUgrian only, with secondary ablaut in pO. The adduced Samoyedic forms at UEW193 do not belong here or, indeed, with each other:

Nganasan kooðaj 'butterfly' = KS136 kóud'e, a derivate of kóu 'ear'; cf. [249] \*kawi=lí- 'listens'.

Somewhat similar synonyms are U678 \*kutki 'Ameise' LEMC\uZ---/----; and U209 \*kuu(n)s'i -F--\UZ-VH/----, which is probably the same word as [36] \*kuuns'i 'urin(at)e(s)', q.v.

## [210] ?\*sas'V- 'dries'

> sas(a)-   tåås- -----\---OVH/----	*i~ë   *aa H166 D1379 U844	4A <sup>II</sup>
--	-------------------------------	------------------

If H asz- reflects the original shape of this word we must reckon with assimilation in pO: \*sas'V- > s'as'V-. The reverse is also possible; in that case we would have an affective reduplicative compound \*s'a&s'V- with dissimilation of the initial in V and H.

## [211] \*kaj=t=V1 'day'

> ka/otl(-)   xååtal -----\---ov-/----	*i~ë   *aa H341 (U167 *o)	4A <sup>II</sup>
---	------------------------------	------------------

A derivative of pU \*kaja- 'shines'. See [401] \*kuj(i)=nV1 'Morgenröte'.  
~ D571, D522

## [212] \*ja(ŋ)kV- 'turns/wanders'

> J jaŋ <sup>(w)</sup> -   jáŋŋx- --m-\---ov-/----	*i~*ë   *aa H198 U88	4A <sup>II</sup>
---	-------------------------	------------------

If M jaka- 'goes (around), wanders' belongs here we must assume affective gemination (\*jakka-; cf. Keresztes 1987.64) in place of (or as the historical equivalent of) the nasalinity indicated by the ObUgrian words. See also the excursus on verbs of motion at [108] \*juktV- 'come, arrives'.

## [213] \*uli-~\*wali- 'is, lives'

> wa/ol-   åål- -FMC\UZOvh/----	*i~*ë   *aa H681 U580	4A <sup>II</sup>
------------------------------------	--------------------------	------------------

The reconstruction offered here is merely a stopgap; it is designed to suggest that this word already had ablaut in pFU. The development of the vocalism was perhaps affected, in some of the daughter languages, by contamination with the antonymous [214] \*kaxlV- 'dies'.

## [214] \*kaxlV- 'dies'

> ka/ol-   xåäl-	*i~*ë   *aa	4A <sup>±</sup>
-FMC\UZOVH/TNQM	H253 U173 J56	

The second-syllable vocalism of this word is unclear; it may originally have been \*A, but became contaminated with the \*I of [213] \*uli-~wali- 'is, lives'. The ambiguity of the quantity of the first-syllable vowel (Janhunen 1981.263) perhaps reflects the complexity of the signal-structure: is there a morpheme-boundary here?

See also [225] \*kaxlV=jV 'corpse'.

## [215] \*sa(a)p=s'i 'net needle'

> sapës   LU toos	*i~*ë   *aa	4A <sup>±</sup>
L---C\---ov-/----	H153 U432	

Probably derived, but from what root?

## [216] \*ämV= 'scoops'

> ämér-   aamart-	*i~*e   *ää	4A <sup>±</sup>
----\U-ov-/----	H34 U25 D102	

Ostyak Ni amér- points to a high-grade variant, i.e. the interdialectal reflexes of this stem preserve results of the conditioned shift \*e > \*i in early pO. The o- of Udmurt omirt- is ambiguous. If, as the UEW suggests, this stem is derived, we have here a light isotope to UEW7 \*ama- 'ladles, scoops'. See also [217] and [218], both 'submerges, dives'.

## [217] \*märV= 'submerges; dives'

> J märet- (Ni!)   maarext-	*i~*e   *ää	4A <sup>±</sup>
----\---ovH/----	H405 U869 D965	

The 'sub-' component of the meaning 'submerges' may have had to be specified by coverbs; cf. H félmer=ül- 'rises to surface', elmer=ül- 'sinks'. Probably a light isotope to [218] \*marV=.

## [218] \*mar= 'submerges; dives'

> mar~mor-   muurs-	*i~ë   *aa> *uu	4A <sup>±</sup>
----\---ovH/----	H408 U868	

With early pO \*ë~\*i ablaut (as in the light isotope of this word, [217] \*märV-, q.v.) and with double rotation in pV. H preserves a causative only: márt- 'immerses, dips'.

A possible derivate of this root is given at UEW872: we may reconstruct pre-Ostyak \*ma(a)r=Vs > e.g. O Kr muurës 'Abstand von der Daumenspitze bis zu den Zeigefinger-Knöcheln', pre-Hungarian \*marV=k(k)V > marok, mark- 'the empty (and at least slightly closed)

hand'.

- [219] \*čiŋki ~ ? \*čänjkV '(moist) heat'  
 > čenjk | saanjk      \*i (< \*e?) | (?\*e > \*ää)      < 1<sub>T</sub>? < 4<sub>L</sub>?  
 -F---\U-ov-/---- H106 U57 D287

With irregular lengthening in pV, or, if from an earlier low grade, from 4<sub>L</sub>? with early pO \*e > \*i and the regular pV \*e > \*ää. See also [310] \*čänjä H108 'fog, vapour, smoke'. If the two words are connected we must segment a derivational suffix \*=kV.

- [220] \*kääc'ä 'barbel'  
 > DN kosë | kaasew      \*ü < \*i < \*e | \*ää      < 4<sub>L</sub>?  
 LF--\ -zovh/---- H333 D691

The O shows evidence of an early \*e > \*i, with rounding (> \*ü) due to a putative velar (H keszeg, V KO kœcœsēn: UEW141) in the following syllable. Compare the Ostyak dialect reflexes of \*tēn=tV=kV < [231] \*tan=tV= 'outer bark of birch' and [221] \*jänti 'bowstring'.

- [221] \*jänti 'bowstring'  
 > jöntëγ | jaantew      \*ü < \*i < \*e | \*ää      < 4<sub>L</sub>?  
 -F-C\ --ovh/TNQ-      H195 U92 J43

With early, and secondary, raising and rounding in pO; cf. \*kääc'ä 'barbel'.

- [222] \*aŋtV= 'side'  
 > aŋti | ååŋtil      \*i < \*ë | \*aa      < 4<sub>L</sub>?  
 ----- \ --ovh/---- H51 (U877 \*o) D144

With pO \*ë > \*i. The medial -l- of H oldal 'side' is a hypercorrection. The final l of the V and H words is either a derivational suffix (UEW) or a remnant of [34] \*lïxu 'bone'.

- [223] \*rak(k)V(-) 'near, kin; nears'  
 > ray=ëm, Ni rax- | ráaw-      \*i < \*ë | \*aa      < 4<sub>L</sub>?  
 -F---\ --ovh/---- H553 U418 D1260

An affective word, as initial \*r- and geminate \*-kk- indicate. The -o- of H rokon 'kin; near' is irregular.

- [224] \*in'a 'spouse's or sibling's wife'  
 > an'ëki | åån'iγ      \*i < \*ë | \*aa      < 4<sub>L</sub>?  
 L-m-\uzovh/---- H43 U10

Known in L only in the far eastern languages, the root nevertheless

clearly had \*aa; if there were a F cognate we would expect it to be \*ona. The M and P words cited by the UEW offer little that is certain. The -gy of H ángy is clearly derivational, but the mechanics are unclear; they are certainly not the same as those of jobbágы, as the EWU rather disingenuously suggests (37a).

- [225] \*kaxlV=jV 'corpse'  
 > kali | xåålæ  
 ----- \ --ov- / -----

\*i < \*ë | \*aa < 4<sup>1</sup>  
 H255 D471

We have here a formulation unique to OU. In other Uralic languages, words meaning 'corpse' have been built to this root ([214] \*kaxlV- 'dies') with the suffix \*=mA; see Janhunen 1992.240-242.

- [226] \*karV= '(woodpecker)'  
 > kajamjì | xåårxaj  
 ----- \ --ovH / -----

\*i < \*ë | \*aa < 4<sup>1</sup>  
 H324 U855

The O forms are products of a metathesis: \*kijVrγVj < \*kirVγVj (UEW). The final element \*kVj in the antecedent to the H, O, and V pendants may well be a derivational sequence (UEW), but it is also reminiscent of H743 \*kijV '(little) bird'. In this latter case we would have a compound \*karV=jV+kijV 'biting bird'; for the verb, see UEW129 \*karV- 'bites'.

- [227] \*paarV(=)wa 'raft'  
 > parë | pååra  
 L--- \ uzov- / -----

\*i < \*ë | \*aa < 4<sup>1</sup>  
 H534 U356, 395

The UEW reconstructs two separate but phonologically similar roots: 356 \*parV/\*porV/\*parwa/\*porwa 'Haufen, Gruppe' and 395 \*pora '(raft)'. The reconstructed meanings overlap somewhat: a raft is an assemblage of floating items.

I follow Tálos 1987.78 in taking F parvi, sG parve- 'swarm, flock; attic space' to be an early loan from pL, where the overstrong grade -r'r- attests clearly to trisyllabicity (L974 \*pååreevee). Trisyllabicity, in turn, suggests that this word is derived. If it is indeed derived, a possible, but unlikely, light isotope would be [193] \*pä(ä)r(=)tä 'board'; for the meaning-axis cf. Japanese ikada 'raft' < (\*)'float board', Martin 1987.422.

- [228] \*kunta- ~ \*kanta 'hunts for X; hunting party'  
 > kant=ëγ | xåånt  
 LFM- \ --ovH / -----

\*i < \*ë | \*aa < 4<sup>1</sup>  
 H750

This root is in all likelihood the source of most if not all of the cognates listed in three separate sets by the UEW: 206 \*kunta 'Gemeinschaft', 206

\*kunta 'wildes Renntier', and 207 \*kunta- 'fangen; (eine Beute) finden'. In the palatalized -n'd'- of M kon'd'a 'comrade' we may see a trace of the nomen agentis suffix \*=jA (Korhonen 1981.316): we depart from a form \*kuntV=jV (\*)'(fellow) hunter; co-member of hunting party'. F kunta 'commune', E kond (sG konna) 'Genossenschaft' refer to relatively pacific enterprises, V xåånt and H had, hada- 'army' to more bellicose ones. The Ostyak self-designation, \*kïnt=ëγ (\*)'hunter', is a nomen agentis/actionis built with pU \*=k (cf. Korhonen 1981.314). Note the early conditioned shift \*ë > \*i in pO; contrast the fate of pO \*kënték 'Konda (river)' D518. We should identify L god'de (L450) 'wild reindeer' with its homophone god'de- (L451) 'kills'. Cf. Sakhalin Nivkh |ŋa| 'animal, game for hunting' ~ |ŋa-| 'fetches' (RA), or even English |venison|.

[229] \*wað'kV 'stretch of river, valley'

> wayél'   wåål'	*i < *ë   *aa	< 4 <sub>T</sub>
----\ -ZOVH/----	H677 U550	

This word became various potamonyms in diverse Ostyak dialects and, in western dialects, came to designate the Vogul. The H pendant is völgy(e-) 'valley', with regular \*a > \*ä (> \*ö) in the environment \*w\_C'; see [240] \*mans'V= '(hu)man; (exogamous phratry)'.

[230] pOU \*jëryēn 'Samoyed; northerner'

> jaryan   jáårn	*i < *ë   *aa	< 4 <sub>T</sub>
----\ --ov- / ----	H207	

Perhaps a borrowing in pOU from a descendant of pS \*ërm@ 'Norden'.

[231] \*tan=tV= 'outer bark of birch'

> tontëγ   N toont	*u~*i < *ë   *aa	< 4 <sub>T</sub>
----\ --ovh/----	H639 U896 D1446	

Ostyak DN shows both -o- (! < \*u) and -uu- (< \*ë). Not only H tidó but also F tana (U509) are better accommodated by a protoform with \*a. The medial \*-t- of the H and OU forms is either part of a derivational suffix or reduplication. In pO we would have \*tén&tV=kV > \*tïntVγ ~ \*tuntVγ.

[232] \*säxi=r=pV= 'bait, ? medicine'

> lärpé   teerpi	*e   *ii	< 4 <sub>T</sub> ? < 1 <sub>T</sub> ?
----\ --ov- / ----	H164 D806	

An OU innovation for 'bait', probably derived from [292] \*sixi- ?~ \*säxi- 'eats'. Contrast V teep 'food' and compare, with different suffixes, Z sam

and F syötti and sättä = pL \*sääptee (L1128) 'bait'. Distinct yet parallel derivations — (\*)'food; swallows, bites; eats'~'bait' — may be seen in English |bait|, German |Köder|, French |appât|, Italian and Latin |esca|.

### 5. Correspondence-type 5 $\pm$ : pO long low vowel = pV long low vowel.

Thirty-four of the thirty-six stems with correspondence-type 5 $\pm$  had a low vowel in pre-OU. The remaining two stems show evidence of high/low ablaut: they are a verb/noun pair [234] meaning 'flows; brook' and an animal designation of presumably hypocoristic origin, [235] 'ovine'.

None of the words in this class have certain Samoyedic pendants.

#### [233] \*kä(n)s'V- 'wastes away'

> VVj käänt'-   kaans'- <O?	*ää   * (ää)	5 $\pm$
-----\---OVH/-----	H296 U855 D652	

Presumably affective: note the meaning and the Nasalschwankung (from \*-ns'- we would expect H -gy-). The clear H pendant is keshed- 'becomes threadbare, worn'; but as the UEW suggests, the kes= of H keskëny 'narrow' may also belong here. The L forms cited at UEW137 — see the fuller range at L383 \*kääncee 'kapea' — could be of the same origin if we assumed two parallel derivational suffixes, one with \*č (giving the L words) and the other with \*c'~\*s' (giving the H and OU), but it is more likely that the UEW is correct in assuming that these are two separate etyma.

For the affective meaning-axis 'thin/narrow~sickly' compare the Latin association of |macer| 'maigre' with the unrelated |maaceraa-| 'attendrir par macération' EM375b, and the F Zwillingswörter |kipeä| 'sore; wound; illness' ~ |kapea| 'narrow, strait'.

#### [234] \*s(')ajjī=mV ~ \*s(')ujjī- 'brook; flows'

> sâåjäm   sâåjäm	*aa   *aa	5 $\pm$
1f--\U-OV-/----	H568 U457	

If this word is derived, we may think of L1146 \*sojē- 'taipua' = F suj=u- 'bends, turns, yields, flows'. The initial \*s'- required for the U and OU would then be the result of assimilation to the \*-j-; the shift from \*s- to \*s'- (Honti's \*θ- > \*s-) was quite regular in front-vocalic environments in pV (Tálos 1984.90).

Or the L words may descend from an early borrowing from F; in that case

\*s'- is unexceptionable.

The words assembled at UEW775 are clearly a separate, and unclear, etymology.

[235] \*aači ~ \*uuči 'ovine'

> ååč   åås	*aa   *aa	5 <sup>±</sup>
-FMC\UZOV-/----	H4 (U541 *u)	

The F pendants point to \*uu, the core languages to \*aa. The u of Mm uča is not diagnostic. Affective. Compare [197] \*pääčä ~ \*paača 'reindeer (calf)'.

[236] ?\*wa(a)pV- 'observes'

> Ni wååpij-   KM woopl-	*aa   *aa?	5 <sup>±?</sup>
----\--ov-/----	H700 (U583 *o) D1612	

The F pendants could belong here only if we were to depart from a derived form \*wiija=ppV- > \*wëjippV- > \*wëëppi- (from which L borrowed) > opp=i-. Without further examples, this is not convincing.

[237] ?\*martV 'migratory birds' summer venue'

> måårti   måårti	*aa   *aa	5 <sup>±</sup>
----\--ov-/----	H412 U280 D966	

With rotation in neither pO nor pV; therefore suspect. Recent, separate, borrowing? The Samoyedic forms cited by the UEW do not belong here; for the Nganasan, Nenets, Enets, and Kamass see SW 88 (\*m@ra 'Rand?'); note also SW172 (\*war@ 'Rand').

[238] ?\*kajV- 'meets, touches'

> kååj-   xååj-	*aa   *aa	5 <sup>±</sup>
1f--\--ov-/----	H230 U118 C85? D437	

The putative western pendants are quite doubtful on semasiological grounds. The lack of rotation in both pO and pV makes it unlikely that this word is older than pOU.

[239] \*ča&čV- 'sweeps; pours'

> čååč-   såås-	*aa   *aa	5 <sup>±</sup>
-f--\u-ov-/--q-	H89 (U60 *o, *a) D235	

An affective-descriptive reduplicative compound. Whether U or V better preserves the precise original meaning is unclear. F huos=i- probably does not belong here. See also C82.

## [240] \*manc'V= '(hu)man'

> V maant'   maans'i -----\--OVH/-----	*aa   *ää H398 U866, U867	5 $\pm$
---	------------------------------	---------

In somewhat daring fashion, the UEW (867) connects H mese and O V maant', both 'tale, story', with this root. The Ostyak reflex is the name of an exogamous phratry.

With \*a > \*ä in pV and, if the H name-formant Megyer belongs here, partially in H as well. Notice that the environment \*m\_C does not match exactly that specified by the rule which I formulated 1992.25 to explain, among others, the equations H hólgy = L gað'fe ([182] \*kað'wa) and H vessző = L važos~vaččus(â) ([31] \*wac'V= ).

Ultimately an Iranian loan; the deployment of the Ugrian cluster \*-nc'- as a replacement for Iranian \*-nš- (Korenych 1972.60) raises questions which cannot be pursued here concerning the inventory and phonotactics of both donor and receiver languages.

## [241] \*mälV- 'touches'

> mäält-   maalas'l- -e---\--zov-/-----	*ää   *ää H387 U267 C98 D918	5 $\pm$
--	---------------------------------	---------

Probably a core innovation. The putative E pendant mälu 'Gedächtnis' cited by the UEW seems unlikely; for another unlikely connection for the E word see [194] \*mäxli=w= 'breast'.

## [242] \*älV(=mV) 'other (side)'

> J ääläm   aaläm -----\--OVH/-----	*ää   *ää H19 U836 D78	5 $\pm$
--	---------------------------	---------

A Ugrian innovation? Note its early attestation in H Erd+ély 'Transylvania'.

## [243] \*(j)ä(ä)&amp;c'ä 'dad!/grandfather'

> äät'i   LO aas'; So < O L---\--ov-/-----	*ää   *ää H1 U22 D226: ?<t'ä&	5 $\pm$
---	----------------------------------	---------

In ablaut (Abondolo 1992.24) to \*ic'ä 'father', with the distribution -FMC\---VH/TNQ- UEW78

The double listing of the V forms (UEW22, 78) reflects bifurcation; V Pelymka preserves both variants: ääs' 'mother's father' and aas' 'father's father'. The parallel double listing of L forms (UEW, ll.cc.) reflects vacillation in the quantity of the low grade: L E-N \*aac'c'ee < \*äac'ä, L I&T \*äac'ee < \*äc'ä. For the forms see L2.

## [244] \*paal'a 'tail'

> Kaz påäl'ax   KO pool'ëx	*aa   *aa?	5 $\pm$ ?
--M-\--OV-/----	H517 U393 D1164	

In the light of its polysemy (PMW1833-4) M pulo is probably a conflation of this word and of pFP \*paala (UEW734 \*pola).

## [245] \*waŋV= 'hits, cuts'

> wåák-   LO woonjx=ap	*aa   *aa	5 $\pm$
-----\--OVH/----	H698 U558 D1566	

The UEW cites P forms with an otherwise unknown U|Z correspondence, in roots with the shape CVC, a|u. Even the intra-Permian etymology is absent from Lytkin 1964, and doubted in KESK70.

## [246] \*alV= 'beginning, end'

> åälëŋ   ååwl	*aa   *aa	5 $\pm$
--F-\--OV-/----	H26 U6 D80 j29	

The Samoyedic forms cited by the UEW require Janhunen's pS \*o, which accords ill with the initial a- (< \*ä, \*i) of F alka-. For L vuol'ge- 'departs' see [366] \*wiiłka- '(de)scends'.

Possibly a derivate of this word is the ObUgrian

## [247] \*alV= 'adds on; ? extends by adding'

> åält-   åält-	*aa   *aa	5 $\pm$
-----\--OVH/----	H30 D87	

With secondary ~\*uu~\*ii in O, Honti 1982.74-5. Note the particularly good semantic match of O Trj uulwaŋ juuŋ 'Baum, der aus zweierlei Bäumen besteht: unten Zirbelkiefer, oben Fichte od. unten Fichte, oben Lärche' (D88) and V So åält=ëm (jiw) 'fortgesetzter (Baum)' with H olt-'graft (tree)'.

## [248] \*pa(a)¥V '(fishtrap)'

> påås   påås	*aa   *aa	5 $\pm$
-----\--OV-/----	H542 D1223	

Borrowed into Z as puš; see the discussion at UEW730.

## [249] \*kawi=li- 'hears'

> kool-   LO xool-	*åå   *aa	5 $\pm$
LFMC\UZOV-/----	H246 U197 j62	

A derivate of pU \*kawi 'ear': see Janhunen 1981.253 for the root and its possible FP reflexes, collected as \*korV 'Blatt' at UEW187. For pL\*u (L492; Tálos 1987.73-5) and pF \*uu we can reconstruct an earlier open-

syllable \*aa: \*kawi=li-> \*kaawili > \*kooli-> \*kuuli- (> pL kuli-). H hall- < hadl- 'hears' is entirely unconnected; see [295] \*kanta=li- .

[250] \*lääni ~ \*l'aanji 'track, path, trail'

> Leek <sup>w</sup>   l'åänjx	*œœ   *aa	5 <sup>±</sup>
-f---\--ov-/----	H773 D820	

A taboo hunting-term? In any event, not a very helpful etymology. The O and V forms can be equated only if we assume much affective distortion. V has initial \*l'-, O cacuminal \*L-; note the reverse distribution of the front/back vowels. We may associate F lyy (SKES318b, C97) only if F üü can come from \*ää in the sequence \*ääni.

[251] \*najii '(woman)'

> nääj   naaj	*ää   *ää	5 <sup>±</sup>
LF---\--ovh/----	H420, 421 C121 D980	

A FU-innovated doublet to [313] \*näxi=, with specialized and affective meanings.

OU developed the specialized meanings 'princess' and 'fire, sun'; we may have a reflex also in H nagy 'big'. The fronting \*aa > \*ää in pOU may be due in part to the \*-j-, but also in part to interference by the synonymous \*näxi=. The root occurs with derivational suffixes in F noita 'magician, witch' = L noai'de 'sorcerer' =V n'aajt 'shaman' (V with secondary n'-, U307).

For F nainen, naaras and H nő see [313] \*näxi=.

[252] \*älV 'armful; breast pocket'

> ääl   KU œœl	*ää   *ää	5 <sup>±</sup>
--MC\UZOV-/----	H18 U23	

An MC-core innovation? Cf. [152] for a possible source for (reduplicative) derivation.

[253] pUGR \*n'är= 'raw; naked'

> n'ääräγ   n'aar	*ää   *ää	5 <sup>±</sup>
-----\--ov-/---	H469	

This seems to be an OU innovation. Compare, nevertheless, H nyers 'turgid, damp, raw'.

Affective/descriptive. Note other etyma for words meaning 'moist, raw' such as O Kaz n'ašax < \*n'ič= (U311 \*n'ačkV) or H nyir=ok 'moisture; moist, clayey soil' and V n'aar 'swamp' < \*n'iri (U324 \*n'orV). See also [298] \*n'urmii 'meadow; swamp'.

## [254] \*mäki 'honey'

> määγ+   maaγ	D898: V<O	*ää   *ää	5±
---C\--OV-/----		H381 266	

The northern FU word for 'honey'; contrast southern FU \*miti 'honey' (U273 \*e), whose reflexes are in complementary distribution:

-FM-\UZ--H/----

a situation reminiscent of a scenario first outlined by Gulya (1975).

## [255] \*särkä 'ruff(e)', Russian: ěrš'

> läärëγ   taarka	*ää   *ää	5±
-FMC\--OV-/----	H159 U436 D800	

## [256] \*ämpV 'dog'

> äämp   aamp	*ää   *ää	5±
----\--OVH/----	H33 U836 D101	

H has both eb and ěb; the latter is later and unclear.

This word appears to be a Ugric innovation. There is also a more widespread FU designation for 'dog' which is found outside OU and which may be reconstructed as \*pini (U371 \*e). It is proposed here that we may connect the two as follows. The pFU form \*pini is the high-vowel variant of a form \*pääänä (> H fen=e), which originated as the playful second member of a reduplicative compound \*äänä&pääänä. The antecedent to the OU and H words for 'dog' would then be the result of syncope and assimilation in allegro pronunciation (> \*äämpänä), followed by truncation (> \*ämpV). See also [175] \*äKi 'daughter' and [197] \*pääčä 'reindeer calf'.

## [257] \*päki 'pinecone'

> peey <sup>w</sup>   paak <sup>w</sup>	*œœ   *ää	5±
----\--OV-/----	H494 D1118,1257	

Allowing for playful or taboo-distortive metathesis, one may perhaps compare F käpy 'pine cone; net-needle' and even F käpy 'net-float made of birchbark', with the possible P cognates UZ ki 'awn' (SKES261; UEW788 s.v. \*šuje/\*šoje). Note also pFU \*säppä (> Vogul N taap 'bear's gall' H436, U435) and pre-pS\*pisä (> pS \*p@tä 'gall' SW115).

## [258] \*täw= {privSX} 'empty'

> täälök   taatël	*ää   *ää	5±
----\--OV-/----	H615	

This word looks like a privative (pO \*=lëγ, pV \*=tël) built to the root \*täw= seen in [185] \*täw=δi= 'full'.

## [259] pOU \*čääñč 'knee'

> čääñč   saans	*ää   *ää	5 <sup>±</sup>
----\--ov-/----	H103 U471 D281	

The southern Samoyedic forms cited by the UEW probably do not belong here. An OU (? reduplicative) innovation of a body-part designation. Compare [55] \*čäntä ~ \*činči 'back'.

## [260] \*n'ämV= 'soft'

> n'äämëk   KM n'œœmkëm	*ää   *ää	5 <sup>±</sup>
----\--ov-/----	H464 U314, U330 j106	

See also D1056. Descriptive-affective. The putative S pendants cited by the UEW at page 340 belong for the most part with each other but not here; a better listing may be found at SW106, where Janhunen reconstructs pS \*ä or possibly \*@ for the first-syllable vocalism. The L form cited at UEW314 is too poorly attested to be of diagnostic use.

## [261] \*n'ä(ä)ŋVr 'saddle'

> VK nööγér   LU naayr	*ää   *ää	5 <sup>±</sup>
----\--ovH/----	H426 D996	

A Turkic loan, with metathesis of (\*-ŋ-r >) \*-g-r to -r-g in H nyerëg, nyerge- (Ligeti 1986.141).

## [262] \*päŋi 'finger; thumb'

> päänj   paaja	*ää   *ää	5 <sup>±</sup>
----\--ov-/----	H491	

The morphology of the V forms is unclear. ObUgrian only, and yet: F peukalo 'thumb' and its many various E pendants (SKES534-5) deserve a thorough re-evaluation in this connection. Note also \*päl=kä 'thumb', a derivate of \*pä(ä)xli, for which see [195] \*pälä.

## [263] \*čäkkV= 'suffocates'

> čääkën-   LU šääkäp-	*ää   *ää	5 <sup>±</sup>
----\uzov-/----	H94 D247	

A core innovation, with affective phonology. I take the long ää of e.g. Vogul LO to be original; contrast Honti s.v. The putative U pendants derived from džok= belong here only if we assume secondary rounding of pP \*a (< \*ä) to the left of \*k (Lytkin 1964.170).

## [264] \*\$äptV 'seven; week'

> lääpët   saat	*ää   *ää	5 <sup>±</sup>
----\--ovH/----	H154 U844 D793	

If an Iranian loan, of a date early enough to precede \*s- > \*h-. Korenchy's (1972.70) arguments against an earlier date for the borrowing lose their cogency if we do not reckon with an \*e ≠ \*ä opposition in pOU.

We may suppose instead that this word was borrowed from an IE idiom in which the word for 'seven' began with a s(h)ibilant which did not match any of the pOU (and pH) apical fricatives. The first-syllable vowel in the donor language(s) was front and non-high; further specification would be inaccurate.

H hét, hete- 'seven' is probably not a separate borrowing. Its initial h- must then be due to analogy to the h- of hat 'six' < [294] \*kaxtī.

[265] \*äälV= 'lifts; rises'

> ääläm-   aalm-	*ää   *ää	5 <sup>↓</sup>
----\--OVH/----	H27 U24 j26 D76	

The Samoyedic forms can belong with this etymology only if we can account for the preservation of \*-l- and the second-syllable vocalism: Janhunen has pS \*(j)il@-, a shape which points, if to anything, to \*jila- in pFU.

The -m- of H emel- may be a continuation of \*-lm-, i.e. < \*älmV=l-.

[266] \*wää(ŋ)=s'V= 'duck'

> wääsëγ   waas	*ää   *ää	5 <sup>↓</sup>
1E--\uzovh/----	H716 (U552 *wajc'i) See	

See also D1636. Onomatopoeic. The L and U forms cited by the UEW are poorly attested and show some irregularities. Without a clear point of contrast in U, the Z forms vëz', vës' are ambiguous.

[267] \*kälä- 'stands up, rises'

> kiil- ~ keel=   kʷaal-	*ää~*ii   *ää	5A <sup>↓</sup>
LfMC\UZOVH/----	H249 U133	

The background of F \*kahlat- is unclear. It is also intriguing that we have the U|Z correspondence o|e, which points to \*kilä- or even \*kili-. From \*kälä- we are more apt to expect \*a|ë. Compare [386] \*s'älä- 'cuts'.

[268] \*ää(t)V- 'hardens; steel'

> VVj äät-; Ni eet=ëp   KM œœt-	*ää~ii   *ää	5A <sup>↓</sup>
----\--OVH/----	H70 U837	

An etymology of some importance for any theory of Ugric unity; fraught with phonological, semantic, and cultural-historical difficulties. See EWU294-5.

- [269] \*c'ärki- 'breaks; rues, hurts'

> t'eerëγ- | s'aariγ-      \*ää~\*œœ | \*ää      5 $\frac{1}{2}$   
 LF-C\--OVH/----      H86 U32 D1535

Affective. O Trj -ee- shows that there was sporadic pO labialization in this word, presumably because of the velar in the following cluster.

- [270] \*ääkä '(n)uncle'

> iiki(Ni!) | aki      \*ää~\*ii | \*ää > \*ä      5A $\frac{1}{2}$   
 L---\--OV-/--q-      H13 U72

With irregular short \*ä in V. Not a particularly helpful equation, even if the L (L223) and Q do belong here. The Nenets word cited by the UEW is a hypocoristic truncation of N n'in'aka, a derivative of pS \*inä (SW27) < pU [140] \*ini= ~\*ään(n)ä 'big; many; older male relative'. The Selqup word is poorly attested and probably does not belong here; on Q kinship terms in general see Kuznecova 1980.88-94.

## 6. Correspondence-type 6 $\frac{1}{2}$ : pO long low vowel = pV long high vowel.

- [271] \*a(a)δa=mī 'dream, sleep'

> uuläm, åäläm | uulmaj-      \*aa~\*uu | \*uu      6 $\frac{1}{2}$   
 --MC\UZOVH/----      H664 U335

This word shows vacillating vowel-length. It is a derivate of the following:

- [272] \*aaδa- 'sleeps'

> ala- ~ ol- | OV ala~ olo-      \*i~\*ë | \*i?      # ~  
 L-M-\--OVH/----      H662 (U334 \*o)

in which the L reflexes (L817) point unequivocally to long \*aa. Perhaps the vocalism of the M noun udomo 'sleep' is in analogy to that of the verb simplex udo-.

See also [200] \*aaδi=mī 'sleeping-tent; canopy'.

- [273] \*ikini~\*ääkäni 'chin; gums'

> ääγēN | eenjēn      \*ää | \*ii      6 $\frac{1}{2}$   
 -F--\uzovh/----      H14 (U80)

Z an < \*ikini is perfectly regular; the -ŋ of U an is another matter. The H pendant also points to the high-grade of this body-part designation, but the OU forms are better derived from a low grade \*ää (cf. Sammallahti

1988.541), with double rotation in pV.

[274] \*nä(ä)ŋji 'larch'

> näänk   LM n'ix	*ää   *i < *ii	6 $\frac{1}{4}$
----\ -zov- / ----	H432 U302	

With secondary shortening in pV. The -i- of Z n'i=a is the expected continuation of \*ä in I-stems: cf. Z ki < [390a] \*käti 'hand', Z ji < [188] \*jäŋji 'ice', | bi 'fire' < \*päji= 'shining', cf. \*päji=wä (UEW360 \*päjwä).

[275] \*wä(n)s'V then, 'small, ? puny'

> wäät'   P is'	*ää   *i < *ii	6 $\frac{1}{4}$
----\ --ovh / ----	H696 U899	

It is difficult to separate this etymology from two others:

-F-C\-----/----	U817 *wäc'kV 'dünn, schmal'
-E-C\UZ-v-/----	U78 *ic'ä, *üç'ä 'wenig, klein'

Perhaps the only constancy in the etymon is the presence of the (affective) palatal affricate \*-c- and front vocalism. The forms without initial \*w- may have originated as playful first members in reduplication; cf. H |ici&pici|, English |itsy&bitsy|.

[276] \*pixi=\$ä- ~ \*päxi=\$ä- 'boils, cooks'

> pääl-   peet-	*ää   *ii	6 $\frac{1}{4}$
L---\UZOV- / ----	H485 U385	

For the high/low ablaut, cf. Sammalahti's \*pišä-/\*pešä- (1988.547). The P forms descend from pP \*paša- < \*pixi=šä. The high grade is clearly preserved in L bâsse-. Derived from the root (U368 \*e) \*päxi-, with reflexes in M pije-, Z pu- (!), V paaj=t-, and H fõ=z-; fõ, föv-.

[277] \*n'äxl=mä 'tongue, mouth; drooling'

> n'ääläm   n'eeläm	*ää   *ii	6 $\frac{1}{4}$
LF-C\--OVH / ----	H463 U313	

A noun built to the consonant stem of [196] \*n'äxli- 'swallows', q.v.

For the pertinence here of the F forms (e.g. E nälv, sG nälva SKES412b) see Janhunen 1992.240.

[278] \*lääC=SX 'squirrel'

> läänki   leeŋjen	*ää   *ii	6 $\frac{1}{4}$
----\ --ov- / ----	H348	

Derived from pOU \*lääγ- 'tail' (cf. UEW438 \*sejpä = \*sääjpä 'tail' Tálos

1983.419) > O *ley* (with secondary shortening), V *leey*  $\tau\bar{\tau}$  < 7 $\bar{\tau}$ .

[279] \*s'ääni ~ \*s'iini '(tree-fungus)'

> sänëy | seeniy \*e ~ \*ää | \*ii 6 $\frac{1}{\bar{\tau}}$ ?  
LF-C\U-OVH/---- H596 (U494 \*V), U480

Ostyak interdialectal correspondences (cf. V -ää-) seem to have preserved traces of pFU high/low ablaut in this body-part designation. Both grades are continued in L, as well: the low grade in čadna 'tinder-fungus on birches' < pL \*c'ääänää (L119), and the high grade in čidnâ 'charcoal' < pL \*c'iini (Korhonen 1981.92). The V and H (szén, szene- '(char)coal' forms reflect low grade. The C and U forms are ambiguous.

[280] \*(ä)δ 'imä 'glue; is gluey'

> ejäm | eel'äm \*i~\*e~\*ää | \*ii < 6 $\frac{1}{\bar{\tau}}$   
LF-C\UZOV/TNQM H6 U66 (\*δ'i/ümä), U835 \*äδ'VmV

See also J45. In Ugrian, this descriptive-affective word underwent prothesis to the left of its rare initial \*δ'. But what was the vowel? The -aa- of O Kaz aajäm, the V pendants (< \*ii), and probably the e- of H enyv point to a low front vowel; the eastern and Surgut dialects of Ostyak point to a high front vowel. On the status of initial versus medial \*δ(') in pre-pU see my 1990 paper.

The vocalic profile was either \*i-ä or \*ü-ä; the latter is unusual, in fact unique at the pU level; see Janhunen 1981.225-6.

[281] \*pä(ä)čä- 'loosens, rips open'

> V pääči- Vj | peesat- \*ää~\*i | \*ii 6 $\frac{1}{\bar{\tau}}$ ?  
L---\--OVH/---- H481 U358

I follow Sammallahti (1988.546), who reconstructs second-syllable \*ä chiefly on the basis of the L form cited by the UEW, piätseke-. The short \*-i- of e.g. O Vj pečäγél- is unexpected.

[282] \*apa 'older female kin'

> oopï Likr Ko | uup \*i~\*aa~\*åå | \*uu 6 $\frac{1}{\bar{\tau}}$  
----\--ZOVH-/---- H701 U15 j21$

With considerable ablaut variation in the O dialects; hypocoristic distortion?

The Samoyedic forms cited by the UEW are perhaps continuations of a light isotope \*äpä. The initial p- of Kamass påbå is probably the result of playful reduplication; compare the Selqup word for 'daughter-in-law', ämnä (SW92) << pS \*mej<sup>1</sup>ä < [139] \*miini=.

## [283] \*kaδ'=mV 'ashes'

> J kååjäm   xuul'ëm	*aa   *uu	6+
--M-\--OVH/tnq-	H229 (U194 *u) j70	

The cluster \*-δ'm- suggests a morpheme boundary. This word is possibly a derivate of \*kaδ'i- ~ \*kïδ'i- 'leaves behind'. It has a morphological equivalent built to the resultative in Ostyak: kïit'=ëm 'übriggeblieben' DEWOS577. The final η, v, and u of M kulov, kulu, Mm kulu would then be continuations of this suffix; compare Keresztes 1986.70-1. The Samoyedic words (< pS \*kimä, SW70) can belong here if we posit \*kaδ'=ma >> pre-pS \*kääjmä, with conditioned fronting of \*a > \*ä to the left of the \*j which developed regularly from pU \*δ'.

For the meaning-axis, cf. neo-Melanesian |sit-bilong-paia| 'ashes' (= 'fire-remnant') (Mihalic 1983.175) and southern Ryukyuan (Yonaguni) |higun| 'ashes', derived (with "?") from (\*)'fire-trash' by Martin (1987.396).

## [284] \*kaala- 'spends night'

> kåål-   xuul-	*aa   *uu	6+
-----\UzOVH/-----	H247 U120	

## [285] \*kala=SX 'net'

> kåålëp   x.ulëp	*aa   *uu	6+
-F---\ -ZOVH/-----	H261	

I take the words assembled at UEW120 under \*kalV (with the exception of the Enets) to be derivates of \*kala 'fish'.

## [286] \*ša(a)ra 'lake'

> lår   tuur	*aa   *uu	6+
-----\--OVH/-----	H158 U843	

## [287] \*s'aara- 'dries up; stiffens'

> såår-   su(u)r=l-	*aa   *uu	6+
-----\UzOVH/-----	H605 U466	

A phonaesthetic variant of this word was \*šaar(=)wa 'becomes dry' (UEW502 \*o), with L and Z pendants.

## [288] \*sala- 'steals; secret'

> lålëm-   tuulmant-	*aa   *uu	6+
LFMC\--OV-/TNQM	H141 U430	

For the meaning-axis 'steals'~'secret' cf. Z gu- 'steals' ~ gus'a (< \*gu=üs'=a) 'secret' (KESK83b), U lučk= 'steals' ~ lučk=em 'secretly' (WUK149b), and English |steal=th|.

- [289] \*waača(-) 'town, enclosure; fishes'

> wååč   uus	*aa   *uu	6 $\frac{1}{4}$
LFM- \ -ZOV- / TNQ-	H659, H657 U577 J171	

The sense-development was probably <sup>(\*)</sup>'(Fisch)zaun' > 'town' on the one hand ('city, town' in M, OU, and Q) and <sup>(\*)</sup>'Zaun' > 'hindrance or barrier in general' > L oacce. The noun is presumably primary. See [335] \*waača=mV '(fish weir)'.

- [290] \*wajī 'wild animal'

> wååj=ëγ   uuj	*aa   *uu	6 $\frac{1}{4}$
----\ -ZOV- / ----	H667 U553	

The meaning in Z ('shy') is secondary. Possible derivates of this root are \*waj=ŋjī- 'breathes' > e.g. L1425 \*woojnjē- (see UEW552 \*waj=ŋjī 'Seele; Atem' and Janhunen 1981.256) and \*waj=mī (?~ \*wij=mī) 'breath' > e.g. M ojme 'breath; living being' (UEW809, L1345).

- [291] \*ča(n)&ča- 'walks, wades'

> sooč-   suus-	*åå   *uu	6 $\frac{1}{4}$
--M- \ --OV- / ----	H560 U53	

With dissimilation of the initial in Surgut. Possible nominal derivates are (1) [397] \*ča(a)n&ča 'flea' and (2) F hämähäkki, M šanža=v 'spider'.

- [292] \*sixi- ? ~ \*säxi- 'eats'

> lii- ~ lää=   tee- ~ taa-	*ää~*ii   *ää~*ii	6A $\frac{1}{4}$
-FM- \ UZOVH / ----	H115 (U440 *sewe, *seye)	

Mm s'ive- and the long vowels in OU point to a low-grade variant of this root. See also [232] \*säxi=r=pV= 'bait, ? medicine'. In Permian there was taboo distortion of the initial (U s'i-, Z s'oj-).

- [293] \*kulmi 'three'

> koolém, kuulm=   xuurém	*åå~*uu   *uu	6 $\frac{1}{4}$
LFMC \ UZOVH / ----	H326 U174	

Only the -o- in Ostyak Konda xotmē=t 'third' and Ostyak Synja xol'ma=ŋ 'thirty' (WSFU44) preserve clear OU traces of the original high vowel of this word. The long vowels of the other OU forms are either the result of secondary lengthening or they reflect a rather unlikely low grade \*kaalmV. The -a- of H harma=d= 'third' and harm=inc is regular; the -á- of három 'three' is perhaps in analogy to the á~a alternation of \*aa-stems. The coincidence of H and V -r- pro expected \*-l- may not be trivial. Compare [298] \*n'urmi 'meadow, (swamp)'.

- |   |                        |         |
|---|------------------------|---------|
| [294] *kaxtii 'six' > kuut   xååt<br>LFMC \ UZOVH / ----- | *uu   *aa<br>H338 U225 | (irreg) |
|---|------------------------|---------|

This stem shows the extremely unusual O|V correspondence \*uu/\*aa. It is the \*uu of pO that is unexpected; it is impossible to be certain because of the paucity of similar cases, but we may note that [82] \*kax(=)sī 'pine/fir/spruce' has pO \*ë. Analogy has doubtless been at work, as usual with numerals (think of the qu- of Latin *[quinque]*, the f- of English *[four]*), but the mechanics are unclear to me at this time.

See also [295] \*kanta=li- 'listens'.

- [295] \*kanta=li- 'listens'  
 > kuuntëyl- | LO xoontl-  
 -F---\--OVH/----- \*uu | \*uu? \*aa? 7<sub>T</sub> < 6<sub>T</sub> ??  
 H294 (U207 \*u)

Tálos derived the -a- of H hall- < hadl- 'hears' by way of his excellent rule Ra (1983.419). This would account nicely for the Hungarian, but would still leave us with a high vowel in pFU (\*kunta=). I think that we have here to deal with a low-grade ablaut variant, \*kanta-, to the root [228] \*kunta- ~ \*kanta- 'hunts for X; hunting party', q.v. If this is correct, then V Sosva -uu- in xuuntl- would preserve the original pV \*uu which we expect from a p(F)U low vowel; the \*aa of other V dialects would be in analogy to the pV \*aa of [249] \*kawi=li- 'hears', and the \*uu of pO would be in analogy to the pV.

- |                                |                     |                |    |
|--------------------------------|---------------------|----------------|----|
| [296] *kixi=t=u- '(grows) fat' | > Vj kaatëm   xuut- | *aa   *uu      | 6+ |
| -----\--ovh/---                |                     | H336 (U855 *a) |    |

A derivate of (\*kixi-) ~ \*kaxi 'animal/human fat; grows (fat)' (U195, U903 \*kuje). See [371] \*kix=u=ns'V 'star'.



This word presents difficulties similar to those of [293] \*kulmii 'three': we are faced with long vowels in OU but clear evidence of a high vowel. In the light of the L (L601) and C reflexes it was probably \*u. The -i- of F *lintu* suggests that there may have been a light isotope, or at least contamination with the ancestor of F *lentä-* 'flies' and/or *liitä-* 'glides, swoops'.

A completely different explanation would derive these words from \*liinta, with labialization in early pre-L, pre-V, and pre-H, but with fronting in pre-F (as in F iho < \*jiiša, cf. [125]) and achromatic lowering

in pO.

- [298] \*n'urmii 'meadow; (swamp)'

> n'ooräm   n'uuräm	*åå   *uu	6 $\frac{1}{7}$
LF--\--ovh/----	H476 U328	

The L and F reflexes point to pre-LF \*u. In pre-L this \*u did not go the usual route to \*a (as in, e.g., \*surmii), but rather remained \*u until it was lowered to \*o much later. Compare [293] \*kulmii 'three'.

- [299] \*käl= 'swamp'

> keeLëy   keeliy	*œœ   *ii	6 $\frac{1}{7}$
----\uzov-/----	H258 U134 C21 D627	

With the regular development \*ä > U|Z a|ë before \*l.

- [300] \*kan=tä- 'carries (away?)'

> kåånt-   xuunt-	*aa   *uu	6 $\frac{1}{7}$
LFMC\--ov-/TNQM	H292 U124 J59	

A derivate of the root \*kanii- 'goes (away)', attested in Samoyedic only (Sammallahti 1979.29). The ablauted O kiint 'Rückentragkorb' is secondary. Notice also (UEW177 \*kontakte) > F (with affective gemination) kontti 'birkenrindenes Ränzel', U kudo 'eine Art grosser Korb', Z kuda 'large wooden lidless container', all of which could continue \*kiintV=. See also [368] \*kan=tä=j 'support, beam, treestump'.

## 7. Correspondence-type 7 $\frac{1}{7}$ : pO long high vowel = pV long high vowel.

We have definite Samoyedic pendants to only seven of the 45 words in this class; of these seven, only two seem to have come from a low vowel (a) in pU.

- [301] \*siijV= 'arm; sleeve'

> liit   taajët	*ii   *ii	7 $\frac{1}{7}$
L--C\UZOVH/----	H119 (U445 *o) j610	

The S forms cited by the UEW look more like a light-isotopic Samoyedic innovation: pS \*tü@j 'sleeve' points to pre-Samoyedic \*tüxli. Cf. [97] \*tuxli 'wing'.

The following three stems show secondary labialization in pO (and pH), presumably because of the surrounding consonants:

[302] \*pi(i)lwa 'village'

> puuyël   paawël -f---\--OVH/---	*uu   *ii H502 (U351 *palγV)	7 <sub>T</sub>
--------------------------------------	---------------------------------	----------------

The F reflexes show no phonological difficulties, but the meaning development is vague. If they do not belong here, the medial cluster could have been \*-lk- or \*-xl-.

With secondary labialization in pO.

The -a- of H falu, falva- reflects bimorphemic origin; cf. Tálos' Rule Ra, 1983.419.

[303] \*miiksa 'liver'

> muuyël   maajët LFMC\UZOVH/TNQ-	*uu   *ii H382 (U264 *a) J93 L688	7 <sub>T</sub>
--------------------------------------	--------------------------------------	----------------

[304] \*piiški 'cheek'

> puuylëm   paajt -F---\--OV-/TNQM	*uu   *ii H497 (U396 *o) J117	7 <sub>T</sub>
---------------------------------------	----------------------------------	----------------

With \*ii > pS \*a, F \*u to the left of \*CC; compare [349] \*kiji=rV 'male animal'. See also [332] \*piiŋi= 'breast (pocket)'.

[305] \*kärV- 'sews, plaits; dons shoes'

> käär, kiir=   keer- --MC\UZOV-/----	*ää~*ii   *ii H310 U139	7A <sub>T</sub>
--	----------------------------	-----------------

[306] \*kiri ~ \*käärä 'bark'

> käär, kiir   keer LFMC\UZOVH/----	*ää~*ii   *ii H317 (U148 *e)	7A <sub>T</sub>
--	---------------------------------	-----------------

A body-part designation with high/low ablaut. The reflexes in the western languages point to the high grade, but the OU forms reflect a low grade.

H kérég, kérge- is ambiguous.

With a secondary high grade in pO meaning 'snowcrust'.

[307] \*ä(a)tV= 'evening'

> äät, iit=   eet ---c\--OV-/----	*ää~*ii   *ii H72 (U99 *i, *ü)	7A <sub>T</sub>
--------------------------------------	-----------------------------------	-----------------

The word is poorly attested; thus the pertinence of the C forms is unclear.

The Sayan Samoyedic and Mator forms cited by the UEW are suspect.

The bifurcated and rotated derived O form iit=ëñ 'evening' (~ äät 'night')

is compared to a Mm il'ät' '(in the) evening' at UEW82, but the M word is more likely to be connected with F eilen and its cognates.

[308] \*kämä(=) '(shoe)'

> kiinč   kee(n)s	*ii   *ii	7 <sub>T</sub>
LFMC\ -zov-/----	H285 u650	

These OU forms have a FU etymology if they are twice-rotated derivates of the root \*kämä 'boot, shoe' seen in M kem(e), C kem, Z këm. L has a derivate in \*=Ik, gamâ, sG gabmâg (L357). F kenkä, E king 'shoe' would be from \*kääm=kä.

[309] \*s'äl 'edge, side'

> siilëγ   seel	*ii   *ii	7 <sub>T</sub>
----\ --ovh/----	H587 (U887 *e)	

Note athematic H szél 'edge', szél=ës 'broad'. A nominal derivate of \*s'älä- 'cuts'?

[310] \*čänjä 'fog; smoke'

> čiiγ <sup>w</sup>   seeŋk <sup>w</sup>	*üü   *ii	7 <sub>T</sub>
----\uzov-/----	H108 U59	

Vogul also has a doublet without the nasal: seek<sup>w</sup> 'cool' MK540a. Probably in low-grade ablaut to [219] \*čiŋki '(moist) heat'.

[311] \*ääčkä- 'praises'

> Ni isek-   eesγ-	*ii   *ii	7 <sub>T</sub>
----\uzovh/----	H68 (U71 *e)	

[312] \*lä(m)s'ä 'snare'

> liis   lees	*ii   *ii	7 <sub>T</sub>
LF--\ -zovh/----	H368 U239	

Hungarian belongs in this etymology only if this word is related to U863 \*läc'V- 'lurks in ambush, tries to trap', giving V laas'- and H les(-). We would then have single and double rotation represented in V (laas'-, lees).

[313] \*näxi 'woman'

> VVj nii(ŋ-)   nee	*ii   *ii	7 <sub>T</sub>
LFM-\ -zovh/tnqm	H416 (U305 *ninjä) J100	

The medial -ŋ(ŋ)- seen in L (L727) and Ostyak may be a direct continuation of the \*-x-. L niso < pL \*nisåän 'woman' (L729) also belongs here. For the L vocalism compare [192] \*täji 'louse'. This root, rather than the its FU doublet [251] \*najī, may be the source of

F naise- 'woman' < \*näx=ŋs'i and naaras 'female' < \*näx=rä, both with (irregular?) velarization. For the makeup of the F verb derivative na=i- 'takes a wife' Janhunen (1981.245-6) compares F pui- 'threshes, thrashes'; this is doubtless correct, but scarcely enlightening given the obscurity of the shape of this root (F puu 'tree' < \*pVxV Janhunen 1981.262).

[314] \*\$älV- 'mixes'

> liilëytë-   teeliyt-	*ii   *ii	7 <sub>T</sub>
-----\--ovh/-----	H136 (U845 *e, *ä)	

With regular \*ä(ä) > \*ii in pOU, despite the UEW's comments s.v.. The pertinence here of H elegyëd-, elëgyëd- depends chiefly on our ability to believe in the suffixation (\*\$älV=l-), dissimilation (>> \*äd'Vl-), metathesis (> \*älVd'-), and resuffixation (> \*älVd'=ël-) necessary to account for it.

[315] \*äc'V= 'younger sibling'

> iit'ëki   ees'	*ii   *ii	7 <sub>T</sub>
-----\U-ovH/-----	H2 (U70 *e)	

Affective. With secondary ö < ë in H öcs.

[316] \*näki- 'sees; becomes visible'

> nii(γ <sup>w</sup> )-   neeyl-	*üü   *ii	7 <sub>T</sub>
LFM-\U-ovH/-----	H418 U302	

With secondary labialization (preserved nicely in Ostyak J nüü-) to the left of the velar in pO, as in [303] \*miiksa 'liver', [387] \*s'äk&s'i 'gull'.

[317] \*ka(a)nnV- 'flings; scoops'

> kååN=, kiiN-   xuun-	*aa~*ii   *uu	7A <sub>T</sub>
-----\zovH/-----	H280 U125	

Perhaps with expressive gemination: notice the -ny of H hány and the O cacuminal. The chronology of the derivational suffix =d in Z kund- 'buries; piles up' is unclear; perhaps the word does not belong here. Cf. also [245] \*wanjV- 'hits, cuts'.

[318] ?\*wiija- 'sees, finds; guards'

> wuuj-   waay-	*uu   *ii	7 <sub>T</sub>
-----\--ovH/-----	H652 U588	

If H ó(v)- 'guards, watches over' belongs here we must reconstruct \*ii.

## [319] \*ama= 'ladle'

> uum= (O!)   uum=	*åå~ *uu   *uu	7A <sub>7</sub>
-FM-\--OV-/----	H32 U7	

With (?) affective gemination in F amm=enta-, amm=eq. See also [216]

\*ämV= 'scoops, ladles'.

## [320] \*an̥V- 'partridge'

> VVj iiŋk   aaŋxa	*ii   *ii	7 <sub>7</sub>
----\--OV-/----	H45 U13	

The L and S words cited by the UEW seem unconnected with this word.

## [321] \*šiiŋji 'shadow-soul'

> luuŋk   KO tēew	*uu   *ii	7 <sub>7</sub>
--m-\-zOV-/----	H127 (U503 *u)	

The reconstructum offered by the UEW should give F \*hovi, not huu. In any event, F huu is probably a Germanic loan (UEW s.v.). M čov = Z šen < \*šiiŋji is just barely possible: compare M t'ej = Z din < \*tū(ü)ŋi (U523 \*i, \*ü).

## [322] \*sik&amp;sii 'cedar'

> liiγēl   KM tēet	*ii   *ii	7 <sub>7</sub>
----\UZOV-/ -NQM	H130 (U445 *o, *a, *ē) J160	

Affective reduplication in a dendronym. The OU and S reflexes point clearly to \*i. On the other hand, the U|Z correspondence u|u normally indicates pU \*a(a). Perhaps in this word there was a secondary, but early, pre-Permian change \*i > \*u because of the following velar; the u of pP \*pu 'tree' may have played a role, as well. We would then have \*sik&sii+paxi >> \*siksV+pu > \*suks+pu, with the metathesis \*suks > sus(k-) coming later.

## [323] \*s(')an̥(&amp;)s(')a- 'stands'

> låän't-, luun't-   tuus'=t-	*aa~*uu   *uu	7A <sub>7</sub>
LFMC\ -ZOV-/----	H151 (U431 *sanč'a-)	

It is not clear whether the palatal \*s' was initial, internal, or both; if both, we would have a reduplicative compound. This last possibility is perhaps the most likely, given the widespread confusion in the initials; note the t'- of O DN t'oön't'. Compare also UEW431 \*salkV- 'stehen' and its light isotope [186] \*säl(=kV)- 'gets/puts in boat'.

- [324] \*pa(n)či- 'opens X; X is open'

> puunč-   puuns-	*uu   *uu	7 <sub>T</sub>
L-MC\UZOV-/----	H523 U352	

The L reflexes mean 'naked'. The P reflexes have meanings that have to do with various movements which disclose parts of the body, e.g. Z gac'+kok-jas pudž- 'rolls up trouser-legs' (KESK231a), 'U pužalt-'umkehren (z.B. der Wind den Rockschoss)' (WUK215a). The UEW cites the L but not the P pendants.

- [325] \*ančV '(Njelma)'

> J uunč   uus	*uu   *uu	7 <sub>T</sub>
----\ -zov-/tnqm	H688 (U339 *o) j18	

The Samoyedic words cited by the UEW are all problematic in one way or another; see SW18. Taboo distortion?

- [326] \*aac'a- 'yawns'

> uusil-   uusint-	*uu   *uu	7 <sub>T</sub>
----c\ --ovH/----	H720 U591	

- [327] \*aa=l=tV 'across' > uulti | uulta

-----\ --ovH/----	*uu   *uu	7 <sub>T</sub>
	H685 EWU32a	

- This may be a unique, Ugrian, derivate of the root reconstructed as the distal deictic \*o- ~ \*u- at UEW332, although that source excludes it from the list of cognates there. See also the literature cited at TESz s.vv. által, át.

- [328] \*pala(-) 'piece; bites, eats'

> puuL   puul	*uu   *uu	7 <sub>T</sub>
LFMC\ --ovH/----	H512 U350	

For the range of possible L reflexes see L995. It is not clear whether the verb or noun is primary.

- [329] \*saxi= 'oar'

> luup   tuup	*uu   *uu	7 <sub>T</sub>
-----\ --ov-/----	H152 U449	

A derivate of [330] \*saxi- 'rows', q.v.

- [330] \*saxi- 'rows'

> looyeltë-   tow-	*aa~*åå   *ë? *aa?	5 <sup>↓</sup> !? < 7 <sub>T</sub> ?
LF-C\ -zov-/T-Q-	H128 (U449 *u) (J166 *u, *u@ < *ux)	

Janhunen (1981.245) proposed pU \*-ux- for this word, but the vocalisms

of the Nganasan and Sayan Samoyedic forms cited by the UEW (see also SW166, where the supposed Mator pendant is rightly excluded) derive just as (if not more) readily from \*-ax-. After Tálos 1987.73-5 we know that pL \*u (L1163 \*suk@) regularly derives from \*uu < \*oo < \*aa in I-stems. In pV there may have been originally \*aa (or \*ii?), with contamination with a word meaning 'schöpfen' causing analogical shortening (WSV240, 242).

[331] \*taxi- ~ \*tuxi- 'brings'

> tuu(γ)-   tuu=l-	*uu   *uu	7 <sub>T</sub>
LFM- \ --ovh / TNQ-	H613 (U529 *o) J145	

A deictic verb, perhaps with high/low ablaut in pU. The OU forms and the L (L1291 \*tookë-) are readily explained as deriving from the low grade \*taxi-. M tujë- is ambiguous.

[332] \*piñjí= 'breast (pocket)'

> puuyél   puut'i	*uu   *uu	7 <sub>T</sub>
LFMC\UZOV- / ----	H498 U395	

With \*ii > \*i > \*u not only in pFM but also in pC. pL probably had \*ii > \*i > \*a as usual. Note the affective gemination of Me -ŋg-, and the secondary labialization in C U,B -m-.

Compare [304] \*piñski 'cheek'.

[333] \*kičV(=SX) 'mould, mildew'

> kiičém   xaassi	*ii   *ii	7 <sub>T</sub>
LF-C\ --ov- / ----	H216 (U113 *kačkV)	

C kočë may represent the simple stem, without suffix. L has a derivate in \*=Ik: L502 \*koocc@k 'sour; rotten'. F kitkerä 'bitter, tart' is probably a light isotope. Note also the somewhat synonymous words collected at UEW641 \*kačkV 'Rauch, Brandgeruch, Geruch, Gestank'.

[334] \*kala 'fish'

> kuul   xuul	*uu   *uu	7 <sub>T</sub>
LFMC\ --ovh / TNQM	H245 U119 J59	

This word is the oldest recoverable Uralic designation, but it is probably an old loan-word borrowed as a taboo replacement. (Note its absence in Permian, a branch which is arrestingly poor in inherited hunting terminology: cf. [221] \*jänti 'bowstring', [73] \*jiñsi 'bow'.) One possible source would be a NW IE dialect (Latin squalus, E whale: P958); compare pU \*witi (UEW570 \*wete).

- [335] \*waača=m '(fish weir)'

> wuučém   uusma	*uu   *uu	7 <sub>T</sub>
-F---\--ov-/----	H660 U577	

A derivate of [289] \*waača(-) 'town, enclosure; fishes'. It is not clear whether the suffixes of F ota=ma and ota=va are distinct in origin or the result of bifurcation.

- [336] \*kaa(n)čV 'intestinal worm'

> köNč   LO xuuns	*uu   *uu	7 <sub>T</sub>
---č\--ov-/----	H286 (U205 *u)	

Pan-Mari -u- indicates that this word had \*-aa-.

- [337] \*kī(n)s'V 'birch'

> kuut'   xuusna	*uu   *uu	7 <sub>T</sub>
-f---\uzov-/----	H298 (U211 *u)	

A poor etymology: the P vocalism (U|Z i|i) points to either \*ü or \*u, while the OU pendants require \*i(i) or \*a(a).

Equally irregular are the correspondences in the etymology given at UEW179 \*ko(n)c'kV 'Bast, Baumrinde', with the O Trj reflex kiint' 'Saftschicht (der Kiefer, Birke usw.)'.

- [338] \*kī(i)rV= 'bag'

> kūrēγ   xuuriγ	*ii   *uu	7 <sub>T</sub>
---č\U-ov-/----	H321 (U219 *u, *o) j74	

The Samoyedic forms cited by the UEW belong together but not here. The vowel of the U Kazan form cited is the regular reflex of \*i(i).

- [339] \*kiittV 'shadow; back'

> J kuut=ël   LU xuut-a	*uu   *uu	7 <sub>T</sub>
---\--ovH/----	H335 U225	

- [340] \*n'u/i(n)čV- 'stretches'

> n'iinč-   n'uuns-	*ii   *uu	7 <sub>T</sub>
1---\uzov-/----	H466 (U323 *o)	

Affective-descriptive: cf. the adverbial use in Z n'už mun- 'sich lang hinlegen, lang hinfallen', U n'iž nuj- hinter sich her schleppen'.

- [341] \*pata 'kettle, pot'

> puut   puut	*uu   *uu	7 <sub>T</sub>
1F-C\--ovH/----	H550	

A Wanderwort. C KB pat recalls the vocalism anteceding L batte.

- [342] \*(j)ilma 'human, world, sky, god'

> Ko iit��m   (j)eel��m	*e, *ii   *ii	7?
LF---\UZOV-/----	H189 U81	

Ostyak Kaz has ee, which Honti (1982.70) would derive from pO \*ii by sporadic change.

The irregularities in the vocalic correspondences between the western and core languages, coupled with the semantic expanse of this putative word, suggest that we are perhaps dealing with two separate items.

- [343] \*warV= 'crow'

> uurnj��   uurin	*uu   uu	7?
LFM-\--ovH/----	H709 U559	

The Samoyedic forms cited by the UEW continue \*@, presumably from an earlier high vowel. Compare [413] \*kulk  =CV 'raven'.

- [344] \*waari  = 'riverbed'

> uuri   uuraj	*uu   *uu	7?
-Fm-\--ov-/----	H712	

SKES gives the meaning 'riverbed' for both F ura (1545) and uuro (1565a); both may go back to waari   plus suffixes. The pertinence of the M forms, including orgod'e- 'flees' < \*ur=ke=te- (SKES1548a), is unclear.

- [345] \*iiCV=t 'bearskull'

> uunk��t   LU ��wt	*uu~*ii   *ii	7?
-----\--ov-/----	H12 (U542 *u, *o)	

A derivate of [346] \*iiCV 'head', q.v.

### 7.1 Achromatic correspondence-type @: pO \*aa = pV \*ii.

Two ([346] and [368]) of the 32 words in this class seem to have had \*a in pre-OU; one [376] had \*a~\*i. The rest had \*i(i) in p(F)U.

- [346] \*iiCV 'head (esp. of bear)'

> oo��w   aawa	*����   *ii	@
-----\--ov-/----	H9 (U542 *u, *o) j30	

Perhaps a taboo distortion of UEW336 (\*o) \*aaj=wa 'head'. The Samoyedic forms cited by the UEW point to pS \*uk@ (SW30), which in

turn suggests \*uCCi.

[347] \*axwī 'door'

> ooγ <sup>w</sup>   aawi	*åå   *ii	@
-F-c\--ov-/T---	H10 (U344 *o)	

Katz (1987.338-9) is probably correct to subdivide the article for pS 'door' at SW29. According to this subdivision only Nganasan ñoa belongs here. If C KB amasa, U B opsa belong with this etymology, the -m-, -p- are either continuations of \*-xw- or of a bimorphemic sequence \*-x=m-. In F ovi, ove- we see the regular development of \*a (> \*aa > \*oo) to the left of a non-obstruent in an I-stem; this trajectory culminated in \*oo > o to the left of the glide (cf. F voi < [207] \*wajī 'fat', and the parallel F köysi, köyte- < [184] \*käw(i)δi 'rope').

As mentioned in connection with the C internal consonants, this word may well be a derivate. We might think of an etymon (\*)'(place where) X-ing (occurs)', formed with the well-attested nominalizing suffix(es) \*=-mA~\*=-wA, cf. F valka=ma 'Landungsplatz' < [366] \*wiilka-'(de)scends'.

[348] \*iiŋa(=) 'pulls out; opens'

> iiŋet-   aaŋx <sup>w</sup> -	*aa~*ii   *ii	@
-F--\--OVH/----	H47 U11	

With the achromatic partial shift pO \*ii > \*aa leaving a trace in ablaut. The -l- of Hungarian old- is a hypercorrection. We have H ód- 'loosens, unties' < \*awV=ntV-. A similar, but nominal, formation gave F ava=nt=o 'Wuhne' < \*awa=nta=i.

[349] \*kiji=rV 'male (animal)'

> kåår   xaar	*aa   *ii	@
-F--\--ZOVH/----	H319 U168 j74	

The S forms cited by the UEW belong with one another (SW74 \*kora) but their vocalism makes it difficult to see how to accommodate them here. With F -o- of koiras 'male animal', koira 'dog' from \*i(i) to the left of \*CC; cf. [304] \*piiski 'cheek'. Z -i- in kír is due to the -r.

For the underived root see [404] \*kiji.

[350] \*s'iid(')~\*s'aaδ(')=ka '(duck)'

> sääj   saal'	*aa   *ii	@
LFMC\UZOV-/----	H561 (U482 *o)	

The L reflexes (L172) continue the low grade. The C forms (e.g. KB šoe) may well continue the underived stem.

- [351] \*siiñi 'vein; sinew'

> låån   taan	*aa   *ii	@
LFMC\UZOVH/----	H143 (U441 *ë, *oo) j32	

If the S forms cited by the UEW belong here, the development of both the initial consonant and the vowels is irregular. Janhunen reconstructs pS \*cēn.

- [352] \*s'i(i)ta 'hundred'

> sååt   saat	*aa   *ii	@
LFMC\UZOVH/----	H609 (U467 *a)	

Borrowed into FU from a dialect of IE which had undergone \*k > \*s['].

- [353] \*s'iimi 'scale, fishskin'

> sååm   saam	*aa   *ii	@
LFMC\UZOV-/----	H594 (U476 *ë, *oo)	

The Nenets forms cited by the UEW belong to proto-Samoyedic \*käm@ 'Schuppe' (SW63).

- [354] \*n'ijs'VmV '? gills; ? gums'

> DN n'aajxšëm   n'aaxs'am	*aa   *ii	@
L--C\ -zov-/----	H444 (U311 *a)	

With considerable uncertainty of form and with imprecise reconstructed meaning; the L reflexes (L788) mean 'tongue'. For the overall shape of this body-part designation cf. [11] \*pimsi=mi 'lip'.

- [355] \*s'ilka 'Dammholz, pole'

> sååyél   saayla	*aa   *ii	@
LFM-\ --OVH/----	H583 (U460 *a)	

The Z words cited (with '?') by the UEW cannot belong here if we depart from \*i. The M words are phonologically unexceptionable, but their meanings have diverged strongly ('conifer needle; insect stinger').

- [356] \*piŋka 'fly agaric'

> påänk   paanj	*aa ii	@
--MC\ --OV-/----	H527 (U355 *a)	

Probably from the same Wanderwort which supplied Greek sp(h)oŋg=, Latin fungus, Armenian sunk (EM262a).

- [357] \*n'ixli 'arrow'

> n'åål   n'aal	*aa   *ii	@
LFMC\UZOVH/-NQM	H459 (U317 *ë, *oo) J108	

Poor attestation of this word as an independent morpheme in Samoyedic renders reconstruction difficult; working both up from the daughter S languages and down from their FU cognates, Janhunen has pS \*n'ej, \*n'äj (SW108) tentatively from earlier pS \*n'ë@j (1988.241).

[358] \*n'ir(=kV) 'cartilage'

> n'åärëk   n'aariy	*aa   *ii	@
L--C\--OVH/TNQ-	H474 (U317 *ë, *oo) j108	

The S forms cited by the UEW probably do belong here, despite their exclusion by Janhunen (1981). If Sammallahti's etymology (1979.35) F sarka = L suor'ge = N tarka 'Gabelung' holds, then the \*ë of pS \*n'ër must come from pU \*i in a syllable which became closed with the loss of stem-final \*i: cf. pS \*pën- < \*pïn- < pU \*pïni- (UEW353 \*pane-), with O|V \*i|i 1<sub>T</sub>.

[359] \*tik&tV= '(bird), loon'

> DN taaxtëŋ   taaxt	*aa   *ii	@
L--C\--ZOV-/----	H633 (U530 *o)	

Probably originally an affective-descriptive compound.

Z toktī hints, and the OU words indicate clearly, that there was an \*i in this word. We would expect the F reflex to be \*tahta=; F tohta=ja, tohta=va are therefore loans from L (pL \*tokt@k: 1265). Perhaps \*i > \*u in pre-L via the semantic attraction of popular etymology ('diver, plunger'): cf. the root reconstructed as pFU \*tunke- at UEW537 and the pLF \*tunka implicit at SKES1397-8.

[360] \*kiip(V) 'boat'

> Ni xåáp   xaap	*aa   *ii	@
----\--OV-/----	H302 (U127 *a)	

The UEW reconstructs various dendronyms. This word might possibly be connected with [82] \*kax(=)sï 'pine/fir/spruce' (> pL \*koos@ L536) or with \*kax+jì(x) 'birch' (> V TJ këë=l', UEW169). On the other hand it may be a Yenisseian loan (E. Helimski, p.c.)

[361] \*tirV=kV 'crane'

> tåårëy   taariy	*aa   *ii	@
----\UZOVT/----	H649 (U513 *a)	

[362] \*piis' (=ka) 'mitten'

> påås   paassa	*aa   *ii	@
---C\UZOVT/----	H545 U376	

For the U|Z correspondence ē|i see [207] \*wiijī ~\*waajī 'fat'.

[363] \*uux=tī 'way; isthmus, channel'

> ooγēt   P ēēxt	*åå   * ii	@
-----\--OVH/TNQ-	H16 (U546 *utka) J30	

Despite the objection raised by the UEW, this is perhaps a derivate of ?? \*u(u)xī- ~ \*i(i)xī- 'swims'. The meaning would then have been (\*)"passage across water', first via the water itself (V 'Wasserstrasse zwischen zwei Seen', DEWOS49), then via land (O 'Landenge zwischen zwei Flüssen oder Seen', ibidem). Compare, for the sense-development, English |sound|.

[364] \*δ'ixmī 'bird-cherry'

> joom   l'aam	*åå   * ii	@
LFMC\UZOV-/--Q-	H167 U65 Janhunen 1981.240	

The \*åå in pO is secondary labialization to the left of the \*m. Compare [365] \*iiptī 'hair'.

[365] \*iiptī 'hair'

> oopēt, VVj aawēt   aat	*aa~*åå   * ii	@
Lf-C\--OV-/TNQM	H56 (U14 *a) J21	

The reconstructed cluster \*-pt- may well straddle a morpheme boundary. We might think in terms of a compound of \*aaj=wa, \*aaj=ma 'head' (U336 \*ojwa) and \*tux(lī) 'feather'.

[366] \*wiilkā- '(de)scends'

> wiiyl-, waγl=   waayl-	*ii~*aa   * ii	@
LFMC\--OVH/----	H676 (U554 *a)	

L vuol'ge- 'departs' etc. (L1434) may belong here or with [246] \*alV= 'beginning, end'; or it may represent a blend of the two. F has only derivates with meanings connected with navigation; H has innovated the meanings 'separates; becomes'.

[367] \*jiilkā 'foot'

> LååγēL   laaγēl	*aa   * ii	@
LFMC\--OVH/----	H357 (U88, U865) L292	

The UEW distinguishes two sets of cognates. (1) from U88 \*jalka 'Fuss, Bein' it derives

LFMC\----H/----

the H pendant being gyal=og 'zu Fuss'; (2) from U865 \*lVlKV 'irgendein Glied' it derives

-----\--OVH/-----

with the OU forms cited above and H loll (~ lolv-) 'Vorderschinken' as the reflexes.

It is possible, however, that these two sets of cognates belong to one etymology. In the light of what is now understood about the prehistory of FP vowels it seems reasonable to follow Sammallahti's suggestion (1988.543) that the antecedent of F jalka, L juol'ge etc. had not a low but rather a high back unrounded vowel. We may reconstruct \*jüilka as the antecedent for all the FU reflexes. The lateral initials found in the OU and H pendants would then be due to taboo replacement; cf. the \*k- of pU \*käxli 'tongue' (U144 \*e, \*ee) in the light of the synonymous (and probably older, pace Janhunen 1992.139) taboo-circumlocution pU \*n'äxl=mä. The difference in the H vowels (-a- in derived gyal=og, -o- in monomorpehmic loll) reflects differences in the morphemic makeup of the prototypes: see Tálos 1983.419 and Honti 1985.145.

Both H jel 'sign' ~ jegy 'ticket/token' and F jälki, sG jälke- 'trace, footprint' represent late light isotopes of \*jalka < \*jüilka (U91 \*ä).

[368] \*kan=ta=j 'support, beam, treestump'

> kåånt   LO xaant=a LFM-\--ov-/----	*aa   *ii H293 U123	@
---	------------------------	---

A derivate of [300] \*kan=ta- 'carries', with L guoddo, sG gud'du < \*kan=ta=j parallel to e.g. suolo, sG sul'lu 'island' < \*sala=j. It is just as likely that the sense-development ran opposite to the way posited by the UEW. From (\*)"bearer" > (\*)"foot" (cf. E kand, sG kanna 'ankle, foot') developed the specific reference to (O Kaz.) 'Fuss, Pfeiler des Speichers od. Waldspeichers' and 'stump of a tree'. For a semasiological parallel consider Latin *cruus* with sense-development 'Unterschenkel' > 'Stütze, Pfeiler'; EM 153a s.v. *cruus*: 'jambe (de l'homme et des animaux); patte. Par extension: souche.' Note also L jâlnjes 'stump of a tree (still rooted in the ground)' < \*jülnj= > O jöñkél 'umgestürzter Baum, im Walde liegender Baumstamm, Klotz' (U91 \*ä).

[369] \*wiiyn 'shoulder'

> wåån   waanjén ----\--ov-/----	*aa   *ii H678	@
-------------------------------------	-------------------	---

L, F, and H have a word for 'shoulder' which continues \*waal(=)ka (U581 \*wolka). Could these two sets of cognates derive from the same root?

## [370] \*ipta- 'barks'

> Kam oopët=   uut-	*aa   *uu	@
-f---\UZOV-/----	H55 (U14 *a, *o)	

The Livonian word cited by the UEW may be an independent development, or it may have undergone secondary labialization as in pV.

## [371] \*kix=u=ns'V 'star'

> koos   TJČ koonc'	*åå   *uu	@
-----\UZOvh/---QM	H299 (U210 *u)	

See also Janhunen 1981.263. In all likelihood this is a derivate of the root seen in \*kix=u 'moon' (U211 \*kuje, Janhunen 1981.262 \*kiji/\*kunji). The nasality present or immanent in all save the Ostyak reflexes would then be a continuation of suffixal material, either \*=ns' or \*=ŋs'.

## [372] \*s'iirV= 'pike'

> såårt   sort	*aa   i < *ii?!	@?
-----\--zov-/----	H606 (U492 *u)	

With regular achromatic rotation in pO and secondary shortening in pV. The -i- of Z s'ir is unexpected.

## [373] \*pii's'= 'drips'

> pååsëγ-   paasγ-	*aa   *ii	@
-----\--ovh/----	H546 U881	

Onomatopoieic. The EWU (152a) thinks that H buzog- 'bubbles, effervesces' may belong here. This is not impossible, but it is highly unlikely given the irregular initial b-, medial -z-, and the vocalism. The -gy- of H bugyog- 'bubbles' is better.

## [374] \*riikV 'collar? neckband?'

> rook   LO raaxʷa	*åå   *ii	@
-----\--ov-/----	H557 (U426 *u)	

This etymology is not instructive. Probably a loan, perhaps separately borrowed into pO and pV. Compare, for the vocalic correspondence,

H559	earring	roont	VS räänt	*åå   *ii	@
------	---------	-------	----------	-----------	---

## [375] \*iiktV- 'vomits'

> ååγët-   aajët-	*aa   *ii	@
-----\--ovh/----	H15 (U831 *a)	

H utál- 'detests' has unexpected u-.

- [376] \*n'arma ?~\*n'irma 'shoulder, hip'  
 > Ni n'åårëm | N n'aarëm                            \*aa | \*ii  
 1F--\--ov-/---- H475 (U312 \*a) @

With secondary fronting to the right of \*n'- in F näärvä. If the L word cited by the UEW (and SKES418a) is not a loan from F, we have either secondary raising of \*aa to \*ii in pV or high/low ablaut in a body-part designation in pFU.

- [377] \*pi(i)m̥i 'grass'  
 > poom | pum  
 ----\--ovh/---- \*aa~\*åå | \*u < \*i < \*ii @?  
 H518 U879 ≠ 817

The Ostyak interdialectal ablaut \*aa (VVj paam) ~ \*åå points to an original \*i(i), with early achromatic rotation in pO. It is difficult to determine whether the original vowel was long (with secondary shortening of the pV high vowel), or short (with secondary lengthening of the pO low vowel). In either case, the vowel labialized in pV, doubtlessly with the aid of its labial environment.

The H front-vocalic *füve-* follows regularly from the profile \**i(i)\_i:* compare [73] \**jɪ̃nsi* > *ij* 'bow', \**kij=m̥i* > *him* 'male' (= V xum; cf. UEW168 \**koje=mV*).

8. Correspondence type 8<sub>T</sub>: pO long high vowel = pV short high vowel; plus 5 misfits.

The 8<sub>T̄T̄</sub>-correspondence is always secondary. It may come from earlier 7<sub>T̄</sub>, i.e. be the result of secondary shortening in pV, as in [396] \*wanča- 'crosses, passes' > uunč- | uns- (\*uu | \*u), or it may come from earlier 1<sub>T̄</sub>, i.e. be the result of secondary lengthening in pO, as in [412] \*n'ila= 'eight' > n'iiLëγ | n'ololow (\*ii | \*i). Some cognate-pairs show secondary ablaut in pO, e.g. [402] \*kuuδ'i- 'spawn(s)' > kooj- ~ kuuj- | xul'=ëm (\*åå ~ \*uu | \*u); in others, analogy has levelled away one term of the ablaut, as in [403] \*kuj(=m)=s' 'twenty' > koos | xus (\*åå | \*u).

In a few cases, evidence from beyond ObUgrian makes it more likely that we are dealing with an original 6 $\frac{1}{2}$ -type correspondence, e.g. [390] \*käktä 'two' > käät ~ kiit | kit (\*ää~\*ii | \*i).

Finally, there are five cognate-pairs with the reverse distribution of quantity, i.e. pO short high = pV long high [416-420].

## [378] \*ic'i 'shadow soul'

> Ni is   is LFMC\UZOVH/----	*ii   *i H66 U79	< 1 <sub>T</sub>
---------------------------------	---------------------	------------------

## [379] \*s'i(i)ri 'row; kind, way'

> siir V uu   sir ---c\ -ZOVH/----	*ii   *i H602 U475 (*e) j67	< 1 <sub>T</sub>
---------------------------------------	--------------------------------	------------------

The Samoyedic forms cited by the UEW do not belong here, since they point to initial \*k- followed by a low vowel.

## [380] \*n'injwi 'maggot'

> niink   n'injk <sup>w</sup> 1---\--OVH/----	*ii   *i H467 (U320 *-wŋ-)	< 1 <sub>T</sub>
--	-------------------------------	------------------

An earlier, or at least more canonical, form may have been \*n'inji=w. The difference between the development of this stem and that of [135] 'mouse' in Hungarian is instructive.

## [381] \*iwtV- 'jumps'

> iit-   itγ=al- ----\--OVH/----	*ii   *i H71 U848	< 1 <sub>T</sub>
-------------------------------------	----------------------	------------------

The H verb ūz- is excluded from this equation by the TESz1059. The -γ- of the northern and eastern Vogul forms, and the -tt- (< \*-tγ-) of the western Vogul form cited by Honti probably is historically part of the root; I propose \*-w- with early metathesis. This \*-w- was converted into secondary length in pO and into length and labiality in H. Compare [383] \*liw&li 'breath(es); soul'

## [382] \*iδi= ~ \*ääδä= 'fore' ~ 'far'

> iil   eelēn -F--\--OVH/----	*ii   *i H187 (U71 *e)	< 1 <sub>T</sub> ? 7 <sub>T</sub> ?
----------------------------------	---------------------------	-------------------------------------

If this deictic occurs in Samoyedic, it is hidden in a noun meaning 'tip'; see Mikola's arguments (1975.184ff., 190) and [153] \*üli 'top' 3<sub>L</sub>.

F clearly preserves both high and low grades: we have ete- 'space in front of X, fore' < \*iδi= and etä= 'far' < \*ääδä; see my forthcoming paper. As Tálos 1983.419 hints, the H words el=ő 'fore' and él 'edge < tip' may constitute a doublet, but contraction and shortening rules in the prehistory of Hungarian make it difficult to determine whether either or both descends from a high or low vowel.

From the meanings in OU, it would seem more likely that we have in iil | eelēn the descendants of the high grade. In that case we must reckon with secondary lengthening in pO. But it is also possible that the OU forms

represent both grades, with analogical levelling in favour of the long low vowel in pO and of the high short vowel in pV.

[383] \*liw&lV(-) ~ \*läw&lV(-) 'breath(es)'

> liil, läält-   lil, TJ läl LF--\UZOVH/----	*ii~*ää   *i~*e H359 (U247 *e)	< 1 <sub>T</sub>
---	-----------------------------------	------------------

With high/low ablaut typical of body-part designations; note that a noun reflex meaning something like 'soul' is attested only from Udmurt eastwards.

The P forms (and the L, if they are not loans: pL \*ee L596) are better explained as deriving from a low grade; the F and H (lélk-) evidence reflects high grade. The verb/noun distinction is probably an OU innovation; cf. [390] \*käktä 'two'.

[384] \*käli=w '(in-law)'

> kiiLi   kil LFM-\UZOV-/TNQ-	*üü < *ii   *i U135 J67	< 1 <sub>T</sub> ? 7 <sub>T</sub> ?
----------------------------------	----------------------------	-------------------------------------

The labiality of the vowel reconstructable for pO suggests that the cluster in this word underwent a characteristic Ostyak metathesis:

\*käli=w > \*kälwi > \*käwli. The length of the vowel reconstructable for pO fits well with the low vowel in the proto-language (\*ä) which is clearly indicated by the peripheral witnesses. The Vogul forms are then either loans from Ostyak (the more likely alternative, given the dialect distribution within Vogul) or, if they are a legacy from common OU, they might just possibly represent a secondary shortening in pV; in either case the matter is more or less closed. But not quite: there is also a rival and synonymous reconstruction with \*-δ-:

-f---\--ov-/---- (U154 \*ü, \*i)

This antecedent of this word, attested unambiguously only in F, clearly had a high vowel (F kyty, E küdi 'spouse's brother'). We can reconstruct \*küδi=w ad hoc; the \*-δ- then excludes the Samoyedic pendants.

It is most prudent, for the present, to suppose that we are dealing here with two separate words, presumably designations of different kinds of in-laws, which fell together in OU or in pO; cf. UEW154 and Szíj 1984.435.

[385] \*kirwä- 'avoids, dodges'

> käär-, kiir=ëγ=   kir- L---\--OVH/----	*ii~*ää   *i H309 u147	< 1 <sub>T</sub>
---	---------------------------	------------------

The UEW does not cite the Lapp cognates (L325).

The following two stems seem clearly to have had a low vowel in pre-OV; we may reckon therefore with secondary lengthening in pO, i.e.  $8_{\bar{T}T} < 7_{\bar{T}}$ .

[386] \*s'älä- '(cuts)'

> siil-   siltaal-	*üü < *ii   *i	$< 7_{\bar{T}}$
LF-C\UZOVH/----	H588 U470	

With secondary labialisation (why? the surrounding consonantism?) in pO and secondary shortening in pV. Note that [267] \*kälä- 'wades, rises' gives \*ää~\*ii in pO.

See also [309] \*s'äl 'edge; side'.

[387] \*s'äk&s'i '(gull)'

> siiγʷes   siγ̥es	*üü < *ii   *i	$< 7_{\bar{T}}$
LF--\zov-/----	H586 H469	

Probably a reduplicative compound, as typically in animal designations. The LF forms point to a low grade. Since high/low ablaut is not characteristic of animal designations it seems likely that there has been a secondary shortening in pV.

For the Ostyak we have pU \*-ä- > \*-ää- > \*-ii- > \*-üü- (to the left of \*γ) > (in Trj.) -ii-, with displacement of the labiality back onto the velar.

The next three stems seem to go back to earlier low vowels; given the O|V correspondences we may assume  $6_{\bar{T}}$ , with secondary shortening in pV:

[388] \*s'ääpä= 'neck'

> sääp=ël   sip	*ää   *i	$< 6_{\bar{T}}$
LFMC\UZOV-/----	H600	

The western languages LFM point clearly to \*ää in this word. Secondary shortening in pV before tautomorphemic \*p will explain the Vogul forms (contrast the secondary lengthening before \*p in the derived forms discussed at [91] \*s'iwi= 'clay, loam'). We may then assume retention in pO and rotation  $\frac{1}{2} > \frac{1}{2}$  in pV; see stems with correspondence type  $6_{\bar{T}}$ . For a parallel development in back-vocalic words see [394] 'fishes' and [402] 'spawns'.

[389] \*kärtV= (duck)'

> Kaz kaartan   LO kirtiγ	*œœ   *i	$< 6_{\bar{T}}$
----\UZOV-/----	H240 (U150 *e, *ä)	

A derivative, perhaps, of the word for 'iron' (DEWOS688), but the

trajectory of this ultimately Iranian loanword into Ostyak and Vogul is still unclear.

The O forms cited in this connection at H240 belong to another etymology, namely the purely ObUgrian

keγʷärt   KO kœært	*œœ   *i	H330
--------------------	----------	------

With perhaps pO \*ii~\*ää.

[390] \*käktä 'two'

> käät ~ kiit   kit LFMC\UZOVH/TNQM	*ää~*ii   *i H339 (U118 *a ~ *ä)	< 6 <sup>1</sup> / <sub>T</sub> ?
--	-------------------------------------	-----------------------------------

The UEW is probably incorrect in supposing that this stem had a front/back alternation; giving priority to a putative back-vocalic pendant is completely without justification.

The high-grade variants, attested in Ostyak and used attributively, are probably an OU innovation; on the other hand both H két and kettó can derive from a high vowel.

Note the resemblance to [390a] \*käti '(the two) hand(s)'.

[390a] \*käti 'hand'

> kœæt   kaat LFMC\UZOVH/----	(*ää~*ii~*üü)~*e   *ää H340 U140
----------------------------------	-------------------------------------

This root blossomed in pO. The -œœ- of O Trj kœæt represents the regular reflex-grade: \*e > \*ö, as usually when adjacent to velars. Ablaut derivates include VVj kœæt=ëγ- 'machen' (with vrddhi, as it were, \*ää < \*e), and Ko Kr kiit (< \*ii or \*üü, rotations of \*ää) and Trj kätäl (< \*e, doublet to \*ö above), both 'bear's forepaw'.

It is unrealistic to deny any connection of this root with \*käppä 'Pfote, Hand' (UEW651), perhaps even \*kämini 'die flache/hohle Hand; Handteller' (UEW137) and [147] \*küpsV ~ \*käpsä 'Bein-, Pfotenfell'. Hypocorisms such as F kännny 'handsy-wandsy' and Z kek 'Händchen (liebkosend, schmeichelnd vom Kind)' FF372b-373a give a glimpse of the sorts of playful/taboo distortion to which a root with such a powerful referent is susceptible. The mechanisms in each individual case are unclear and deserve thorough scrutiny.

[391] \*jVxV 'tree; conifer'

> juuγ   jiw ---c\--ov-/ -NQM	*uu   *i H175 (U107 *juwe) J42
----------------------------------	-----------------------------------

Trapped between two glides, the first-syllable vowel of this stem has

undergone too many secondary shifts to be reconstructed with anything approaching certainty; Janhunen modestly proposed that we reconstruct \*i (1981.260). Compare \*pVxV 'tree', Janhunen 1981.262, UEW410 \*puwe).

Possible derivates of this stem are the words reconstructed by the UEW as (p. 639) pFP \*jure 'Wurzel(ende)', e.g. F juure- 'root', M jur 'bottom end of X', U|Z jir | jur 'head' (for the semantics cf. [63] \*päärä) and (p. 852) \*jVkkV=rV 'Wurzel', e.g. H gyökér, V jeek<sup>w</sup>ar 'exposed roots of a fallen tree'. The trajectory would be something along the lines of \*jix=(k)VrV > \*jīyrV > \*-ëë- > \*-oo- > \*juuri in pFP; the -k- of the H form would be the reflex of \*xk (cf. -t of H öt < [138] \*wix=ti 'five; ten').

The following word underwent secondary labialization in both pO and pV:

[392] \*iippi 'father-in-law'

> oop, uup   up	*åå~*uu   *u	< @
LF-C\--OVH/TNQ-	H731 (U14 *a) J24	

Vogul TJ has a in the first syllable. I take the Sosva reflex to be closer to the starting-point: it is the outcome of secondary shortening.

This root is attested in Samoyedic only as the second member of a compound: see Janhunen's compelling proposals (1981.228, 236) concerning this word and its counterpart \*ina 'mother-in-law'. Whether or not the first-syllable vowel was distinctively long, the OU words would be the result of a secondary quantitative shift in either pO or pV.

[393] \*s(')uwδ'a 'finger'

> luuj, looj   tul'=a	*åå~*uu   *u	< 1 <sub>T</sub>
L---\--OVH---M	H116 (U449 *suδ'V)	

Secondary meanings evolved in OU: Ostyak has 'thimble', e.g. the high-grade Trj. luuj, and Vogul has 'ring', e.g. the derived Sosva form tul'=a. If L čuw'de (L186) 'index finger, finger-tip' belongs here (Sammallahti 1988.540) we must assume assimilative adpalatalisation of the initial consonant. In connection with such a putative pre-L \*s'-/\*c'- and in light of the suspect nature of the reconstructed cluster \*-wδ'-, note the resemblance to the word for 'finger, knuckle' reconstructed by the UEW as \*c'VŋV (49).

[394] \*kulta- '(fishes)'

> kool-   xul=t=ne (pon)	*åå   *u	< 6 <sub>L?</sub>
L---\--OV-/----	H248 U198	

This is in all likelihood a derivate of the pU noun \*kala 'fish', but the development is unclear in most of the details. I assume secondary shortening in pV. The form \*kältä- 'fischen (mit dem Zugnetz)' reconstructed at U649 to account for

---C\UZ---/----

may have been the result of wilful (taboo) distortion in a technical term connected with hunting; or it may be a causative built to [267] \*kälä- 'wades; rises' 5A<sup>↓</sup>.

[395] \*n'ari 'hairless (hide)'

> n'uur   LU n'ur	*uu   *u	< 7 <sub>T</sub>
----\UZOV-/----	H473 U313	

With secondary shortening in pV.

U n'ar 'corn, swelling' (Lytkin 1964.165) is excluded by the UEW. A possible semantic bridge is (\*)'place on the skin where no hair is/grows'.

[396] \*wanča- 'crosses, passes'

> uunč-   uns-	*uu   *u	< 7 <sub>T</sub>
L--C\UZOV-/----	H689 U557 L1353	

With \*a > \*u as usual in non-palatal environments in pP (> Z vudž- 'überschreitet'), followed by \*u > ī in Udmurt (viđ- 'id.', viđ 'Brücke, Fußboden'), as in [291] \*ča&čV-.

Note the retention of the \*-n- in the Vogul, and compare the next item.

[397] \*ča(a)(n)&ča 'flea'

> čuunč   sus	*uu   *u	< 7 <sub>T</sub>
-FMC\--OV-/----	H104 (U39 *c'onča, *c'oča)	

With secondary shortening in pV.

I assume rather the opposite of the scenario outlined by the UEW. We begin with a reduplicated stem built on \*ča&. This either had a light-isotope pendant (\*c'ä&), or F -ns- (< \*-n's-) is the result of dissimilation, followed by assimilation of the initial (\*č- > \*c-). The \*-(n)- is affective nasal strengthening. For comparable phonological and morphological distortion cf. pIE 'flea' (Pokorny 102 and EM s.v. pulex)

This animal designation may be related to the verb reconstructed as [291] \*ča(n)čV- 'schreiten, gehen', q.v. For the meaning-axis cf. English [flea], [flee].

[398] \*pun(=)a 'hair; wool; feathers'

> puun   pun	*uu   *u	< 1 <sub>T</sub>
-FMC\--OVH/----	H520 U402	

Perhaps originally derived from, or later confused with, the verb [159] \*punV- 'plaits'; see also UEW403 \*pun'a- 'twist, wind; wound', a stem which remains distinct in Ostyak (V Trj. pon'-).

[399] \*kum=pa 'wave'

> kuump   xump	*uu   *u	< 1 <sub>T</sub>
LFM-\UZOVH/TNQ-	H271 U203 J59	

Probably derived, perhaps from the verb [80] \*kum- 'falls', q.v. Compare also 'tussock' and 'overfull', both 2<sub>T</sub><sup>1</sup>.

[400] \*puwī 'rear'

> puuj   P puj	*uu   *u?	< 1 <sub>T</sub> ?
-f---\--ov-/tnqm	H490 (U401 *pujV) j129	

The length in pV is uncertain because of the poor attestation. It is not clear whether we have, on the FU side, to deal with a base \*puwī or a derivate \*puwī=jV, cf. pS \*pu(w)@, \*pu(w)@=j@ SW129. See also Mikola 1975.176.

[401] \*kuj(i)=nVl 'Morgenröte'

> kuun'ël' Ni kuun't'ël   LO kuj	*uu~*åå   *u	< 1 <sub>T</sub>
-F---\--zovh/----	H742 (U167 *o)	

Besides Vogul, the bare stem is attested only in F (koi 'dawn, daybreak'). The length and ablaut of the pO are presumably secondary; cf. the UEW s.v., which derives e.g. Vakh kuun'ël < \*kujnél and correctly identifies this form with that of H hajnal 'dawn'.

It is possible that this root is in ablaut to \*kaja(-) (Janhunen 1981.221), with the following distribution:

LFMC\-----/TNQM	C21 J58
-----------------	---------

\*kaja(-) survives as an underived noun in Nganasan (Castrén: kou; KS136: kóu) and in Selqup (qëči 'heat'). Derivatives of this grade would include F kaj=o 'reflection, echo; clearness' and N xaja=ré=t 'sun'. Compare, in this connection, [211] \*kaj=tVl 'day' 4<sub>T</sub><sup>11</sup>. Unclear is the connection, if any, with [113] \*kuδ V 'morning'.

[402] \*kuuδ'i- 'spawn(s)'

> kooj- ~ kuuj-   xul'=ëm	*åå ~ *uu   *u	< 1 <sub>T</sub>
LF---\--zov-/----	H228 U194	

The long low vowel (\*aa > \*åå) indicated for pO is presumably

secondary, as is Z -u- (< \*i < \*u). Compare [407] \*numi 'above' and [403] \*kuj(=m)=s' 'twenty'.

[403] \*kuj(=m)=s' 'twenty'

> koos   xus --M-\UZOvh/----	*åå   *u H332 (U224 *kusV, *koje=c'V)	< 1 <sub>T</sub>
---------------------------------	--	------------------

If he M koms' belongs here (it is tacitly excluded by Keresztes 1986), it clearly keeps the nasal; none of the other witnesses unambiguously disallow it. The same root with the nasal suffix only yields a word meaning 'Mann, Mensch', as in V xum:

----\uz-vh/---Q-	(U168 *o)
------------------	-----------

There is no sign of ablaut in Ostyak. Nevertheless the more economical way to deal with the correspondences as we have them is to posit an ablaut \*uu ~ \*åå in pO, with analogy wiping out all traces of the high grade. We would then have an original O|V correspondence \*u|\*u (1<sub>T</sub>) transformed via lengthening, ablaut, and analogy in pO.

See [404] \*kiji 'adult male' for the unsuffixed root.

[404] \*kiji 'adult male'

> kuuj   xuj L---\---ov-/----	*uu   *u H232 (U166 *o)	< 1 <sub>T</sub>
----------------------------------	----------------------------	------------------

See also Sammallahti 1988.543. With secondary labialization in OU. The length of \*uu in pO is also secondary. For derivatives of this root see [403] 'twenty' and [349] 'male'.

[405] \*kiij-n+ila= 'space under arm'

> kuunenj   xanel LF---\UZOvh/----	*uu   *i H282 (U178 *konV=, *kan=)	< 7 <sub>T?</sub>
---------------------------------------	---------------------------------------	-------------------

The UEW is correct in doubting the S forms (SW63 \*kälVn). It is overhasty in rejecting Katz' 1979 (Fromm Festschrift, ed. Schiefer) proposal that we see the remains of a FU noun phrase in this item. The meaning would be something like '\*'shoulder's/side-of-chest's underspace', cf. Japanese |waki no sita|. While it is true that the core languages have no genitive in \*-n, it is almost certain that they descend from a protolanguage which did. It is precisely in environments such as this that such *disiecta membra* survive. The root is not known otherwise; cf. the equally isolated and obscure kidn- of English |kidney|.

We may take the first-syllable vowel to have been \*ii. This vowel was shortened in pV and rounded in pO. The \*j was then lost in the pV sequence \*-jn-, while it melted into the vowel to its left in pO.

The second -a- of F kainalo points to an intermediate form with the

vocalic profile \*i\_a: \*kijnala. For close parallels in the F and O developments of sequences of this shape, compare F maksa, O muuyël < [303] \*mük̥sa 'liver' and (without the labialization in O) \*ikta- > F ahta- 'presses together, crams in', O iiy̥et- 'hangs up' (U5 \*a).

[406] \*kü(ü)=m= 'outside'

> keem   kon -----\---OVH/-----	*œœ~*üü   *ü H275 U857
------------------------------------	---------------------------

A derivate of a deictic root meaning 'outside'. The Vogul forms, e.g. Sosva kon, mean both 'draußen' and 'hinaus'; they may therefore be a syncretism which favoured the form built with lative \*-n, i.e. < \*küm-n. A parallel development, using different materials, is seen in H -bAn 'binnen' : -bA 'hinein' > -bA 'binnen/hinein'.

The -v- of H kívül is probably secondary, although EWU759 keeps its options open.

The UEW may be right in seeking to explain this word without recourse to bichromaticity: the environment \*k\_m is highly conducive to secondary rounding. Note the possible derivative:

H272	edge, seam	kiimél	keempli	*ii   ii	7 <sub>T</sub>
------	------------	--------	---------	----------	----------------

For the meaning-axis, cf. pS |\*piëj| 'das Äussere, Draussenraum' (Janhunen 1981.241, modifying SW124) < \*pääxli 'side, (outer) edge' (Janhunen \*päxli; U369 \*pele, \*peeple).

[407] \*numi 'above'

> noo=m ~ nuu=m=   num=ël -----\---OV-/ -NQM	*uu~*åå   *u H417 U308 j104	< 1 <sub>T</sub>
---	--------------------------------	------------------

The Samoyedic evidence points to a high vowel (\*u) in this stem, as does the Vogul. It follows that pO innovated both length and ablaut in this deictic stem. Compare [402] 'spawn(s)'.

[408] \*kujri 'trough'

> kuuri   xura -F--\UZOV-/-----	*uu   *u H316 U196	< 1 <sub>T</sub>
------------------------------------	-----------------------	------------------

The F and P witnesses indicate that \*u was original in this word. F kuir= (and not \*koir=) indicates that there was secondary length in pre-F as well as in pO.

## [409] \*puulV- 'stabs, stops (shut)'

> puul=ëp   pul=p	*uu   *u	< 1 <sub>T</sub>
-----\---OVH/-----	H513 U880	

Ostyak has both the derivative ('stopper') and the verb primitive.

The height of the -ú- in Old Hungarian (EWU426b) fül- 'antreiben, stacheln, mit dem Treibstachel oder mit der Spießrute (den Ochsen)' indicates that the shortness of the -u- in the Vogul pendant is older than the length of the Ostyak.

## [410] \*warV 'side, edge; direction'

> uur   ur	*uu   *u	< 7 <sub>T</sub>
-----\---OVH-/-----	H708, H706 (U833 *a, *o)	

With secondary shortening in pV: the polysemous V Sosva ur (MK701b) 'side, region, direction; cause; shape, way' = O uur 'Art und Weise; Ursache' (DEWOS159) was probably influenced by V ur 'hill(top)' (MK701a) = O wor < [204] \*wari, q.v.

To summarize: the following two entries in Honti 1982 are probably the same pUGRIC word: (1) H706 'Art, Weise' > uur | ur and H708 'Rand, Kante' > uur | ur are probably the same word; both are 8<sub>TT</sub> < \*warV. (2) There was a FU word [204] \*wari '(Nadel)wald; Hügel' which gave wor | wåår ; (3) H707 'Bergrücken' wor | ur may come from a form \*wiira which also supplied (> \*wïra > \*wara > \*wåra > \*wara >) L varre; see at [204]; (4) H orr 1055: 'Gipfel', orom < \*u (or \*i ?).

## [411] \*turV= 'throat'

> tuur   tur	*uu   *u	< 1 <sub>T</sub>
-----\---OVH/-----	H646 U895	

Hungarian had short \*-u-, which lowered regularly to -o- (torok, tork-).

## [412] \*n'ilä= 'eight &lt; (\*)'bundle of hides'

> n'iiLëy   n'ololow	*ii   *i	< 1 <sub>T</sub>
-----\---OVH/-----	H462	

Tavda Vogul -a- assures us that pV had \*i. Secondary lengthening, therefore, in pO.

The -o- (< \*a < \*i in an a-stem) of H nyol=c is the result of the well-known secondary development before l plus consonant, as in hal- 'dies' ~ hol=t 'dead'. Contrast, with intervocalic -l-, H nyal=áb 'bundle'.

## [413] \*kulkii=CV 'raven'

> kooLënjk   xulax	*åå   *u	< 1 <sub>T</sub>
----\--OVH/tñq-	H259 U200 j77	

The -ll- of H holló < \*-lk- in \*kulkii=CV; cf. Tálos 1983.419 and Honti 1985.147. The Samoyedic forms cited by the UEW may be independent onomatopoeia, or we might dare to posit retention of syllable-final \*l in this word and depart from the same shape: \*kulkii=CV > \*kul@j@.

The \*åå of pO would then be the analogically levelled remnant of an ablauting \*uu~\*åå, itself a product of secondary lengthening.

Note the parallel and equally onomatopoeic designation for the raven in the western languages, \*kVrnV (U228):

LFMC\UC---/-n-m

and compare \*warV= 'crow'.

## [414] \*pVVt 'freezes; ice layer(s)'

> pååt-   put	*aa~*uu   *u	< 7 <sub>T</sub> ?
----\--OVH/----	H549 (U414 *a)	

The -r- at U414 is a typographical error.

## [415] \*s'arta 'young (rein)deer'

> suurti   surti	*uu   *u	< 7 <sub>T</sub>
--MC\--ov-/----	H607 U464	

Judging by the vowels of the C pendants (KB šarðë, U B šorðo) this word had \*a in pFU. We therefore reckon with secondary shortening in pV.

In the following five stems we find a distribution which is the reverse of 8<sub>T</sub>, i.e. we have a high long vowel in pO and high short vowel in pV.

In two stems, [416] 'coagulate(d blood)' and [417] 'becomes visible', we seem to have had secondary shortening in pO:

## [416] \*käli 'coagulates; clotted blood'

> Ni katë   keel=ëp	*i   *ii	< 7 <sub>T</sub> ?
L---\--ov-/----	H252 U134	

The L pendants served as examples for Steinitz' \*e~\*ee ablaut, WSFU111; if connected with the OU forms, we might reconstruct high/low ablaut at the FU level: \*kili- ~ \*käli-.

This somewhat doubtful etymology requires secondary shortening in pO: Nizyam a < \*i < \*ii < \*ä.

- [417] \*kälV- 'becomes visible'

> kel-   LO keel-	*i   *ii	< 7 <sub>T</sub> ?
-----\--ov-/---	H251	

ObUgrian only, but compare [267] \*kälä- 'wades', perhaps earlier: (\*)"goes up(stream) >> rises'.

The following items seem to have had secondary lengthening in pV:

- [418] \*s'ila- 'lightens'

> sal-   saal-	*i   *ii	< 1 <sub>T</sub> ?
-F--\--ov-/----	H589 U459	

- [419] \*rä(ŋ)kV= 'heat'

> Ni ruw   reey	*ü   *ii	< 1 <sub>T</sub> ?
-----\UZOVH/----	H556 (U422 *reŋkV, U423 *rekV, *renjV)	

An affective core innovation. Note initial \*r- and Nasalschwankung. The widest range of semantic growth is manifested in Hungarian, where we have not only H reg-gel 'morning' < (\*)"time of day when it begins to become warmer' (UEW422) but also H rej=t- 'hides' < 'performs wizardry' < (\*)"Verzückung, Trance, Ekstase der Schamanen', cf. H rév=ül=et '(en)trance(ment), ecstasy'.

The forms and meanings of the Permian pendants (U džog 'sehr warm, heiss; rasch, geschwind', Z reg=id 'schnell, bald') suggest that there was contamination at some point with [219] \*čiŋki '(moist) heat'; the UEW derives the U forms from both.

- [420] \*(j)ixi ? \*ixji ?

> 'night; 24-hour period' > V jej   VN jii	*i   *ii	< 1 <sub>T</sub> ??
LFM-\UZOVH/----	H172 (U72 *eje, *uje)	

Length in the Vogul forms may be due to contraction from something like \*jiji.

The shape of this protoform is terribly obscure at present. We need a detailed and daring re-examination of all the Uralic words for 'night', 'evening', 'yesterday' and 'north'.

## Appendix: etymologies limited to ObUgrian

Correspondence-type 1<sub>T</sub>:

H617	weaves	tej-	tij-	*i   *i	1 <sub>T</sub>
H640	prepares hide	tenl-	N tintl-	*i   *i	1 <sub>T</sub>
H237	glutton	kemlëγ	LO kiγmat	*i   *i	1 <sub>T</sub>
H88	hips	Ko. t'erk=ëp	s'irk=ip	*i   *i	1 <sub>T</sub>
H190	new	jelëp	jil'pi	*i   *i	1 <sub>T</sub>
H457	silver fir	n'aLëŋki	n'uli	*i   *u	1 <sub>T</sub>
H761	crooked	VVj kasay	N xusi	*i   *u	1 <sub>T</sub>
H451	nose	n'ol	n'ol	*u   *i	1 <sub>T</sub>
H623	strut	J towël	LU tayl	*u   *i?	1 <sub>T</sub> ?
H250	digs	V kaLi-	xil- (< *xil-)	*i   *i?	1 <sub>T</sub>
H655	gall	wat'érém	wos'ram	*i   *i	1 <sub>T</sub>
H514	snot	paLčëγ	polx	*i   *i	1 <sub>T</sub>
H120	joins/plaits	Ni tax-	towl-	*i   *i	1 <sub>T</sub>
H757	snow-free	karës	N xarës	*i   *i	1 <sub>T</sub>
H713	snow-free	warëk	KU worx	*i   *i?	1 <sub>T</sub>
H629	reindeer hide	tayët	KM toxt	*i   *i?	1 <sub>T</sub> ?
H439	rack	narëm	norma	*i   *i	1 <sub>T</sub>
H3	Verstand	Ni oš	os	*i   *i	1 <sub>T</sub>
H618	hide	taytë	towl	*i   *i	1 <sub>T</sub>
H177	napé	V jakü	KM jaktët	*i   *i	1 <sub>T</sub>
H69	pillow	asm	osma	*i   *i	1 <sub>T</sub>
H820	trodden snow	J t'ayér	s'ayr LO	*i   *i (i)	1 <sub>T</sub>
H318	bare spot	karë	xara	*i   *i	1 <sub>T</sub>
H85	tight	t'arék	KO s'orkë	*i   *i	1 <sub>T</sub>
H283	writes	kanč-	xans-	*i   *i	1 <sub>T</sub>
H82	fish sours	t'ar-	s'or-	*i   *i	1 <sub>T</sub>
H766	(fish)	Ko lamsan	lojsëŋ	*i   *i	1 <sub>T</sub>
H569	hide	sak	saxi	*i   *i	1 <sub>T</sub>
H344	quail	Lat'	los'	*i   *i	1 <sub>T</sub>
H192	plays	J jan=t-	jon=γ-	*i   *i	1 <sub>T</sub>
H213	moss	kač	N xas	*i   *i	1 <sub>T</sub>
H139	gets wet	lal-	tit- (!?)	*i   *i	1 <sub>T</sub>
H581	willow	saγëlt	T šårjë	*i   *i	1 <sub>T</sub> ?
H239	scrapes	Ko xaxr-	P kowr-	*i   *i	1 <sub>T</sub>
H645	snores	tortëγél- +	toryint-	*i~*ë   *i?	1A <sub>T</sub>
H146	wants	laŋk <sup>(w)</sup> -	taŋx-	*i~*ë   *i	1A <sub>T</sub>

H465	dense	n'amr=ëγ	P n'omr=a	*i~*ë	*i	1A <sub>T</sub>
H372	whispers	l'op=ëγ-	LU l'app-	*i~*ë	*i	1A <sub>T</sub>
H278	fastens	kan(a)-	xan-	*i~*ë	*i	1A <sub>T</sub>
H669	sleeps	woj-	oj-	*i~*ë	*i	1A <sub>T</sub>
H109	sucks	Ni šeep-	sip=γ-	*i~*e	*i	1A <sub>T</sub>
H124	ladles	V loγël-	LU tow-	*u	*u	1 <sub>T</sub>
H224	birchbark vessel	DN xočap	xusap	*u	*u	1 <sub>T</sub>
H313	boatroof	korë	xuri	*u	*u	1 <sub>T</sub>
H312	form	kor	xuri	*u	*u	1 <sub>T</sub>
H233	swamp	VVj köj	KM kʷäj	*ü	*ü	1 <sub>T</sub>
H558	mixes	reγʷët-	rawt-	*ü	*ü	1 <sub>T</sub>
H762	burunduk	köt'γér	kos'ar	*ü	*ü	1 <sub>T</sub>
H641	moss	töŋk	taŋkʷ	*ü	*ü	1 <sub>T</sub>
H496	navel	pökLëŋ	pukn'i	*ü	*ü	1 <sub>T</sub>
H758	heaven	Ni kurës	N kʷorës	*ü	*ü	1 <sub>T</sub>
H81	hill	Ni s'uŋk	saŋkʷ	*ü	*ü	1 <sub>T</sub>
H322	brummt	DN korëj-	kury- (aff)	*ü	*ü	1 <sub>T</sub>
H145	hoof	loŋk (Ni!)	to(ŋ)x	*u~*ë	*i	1A <sub>T</sub>

### Correspondence-type 2<sub>T</sub><sup>1</sup>:

H268	hump/heap	J kemt'ér	LU käms'ér	*i   *e	2 <sub>T</sub>
H364	shut/in ADV	DN lep	LO lap+	*i   *e	2 <sub>T</sub>
H504	round; turns	pejéryë-	(puwr)	*i   *e	2 <sub>T</sub>
H327	(Specht)	kerém	KO kärp	*i   *e	2 <sub>T</sub>
H461	coregonus	DN n'elék	n'alk	*i   *e	2 <sub>T</sub>
H173	father	jeγ	jay	*i   *e	2 <sub>T</sub>
H784	evil, tabu	Kaz nar	Sy nar	*i   *e	2 <sub>T</sub>
H117	ladle	lej	LO taj	*i   *e	2 <sub>T</sub>
H84	burns	Ni s'arij	s'arij-	*i   *e	2 <sub>T</sub>
H76	swallow	Ni s'akëj+	s'akajix	*i   *e	2 <sub>T</sub>
H718	hole	wes	as	*i   *e	2 <sub>T</sub>
H436	spine, rib	Ni narë	P nåår	*i?   *e?	2 <sub>T</sub> ??
H570	pearl	sök	sak	*ü   *e	2 <sub>T</sub>
H423	s2 PRO	nöŋ	naŋ	*ü   *e	2 <sub>T</sub>
H760	wettstreiten	VVj kes-	ka(a)s-	*i   *e~ää?	2A <sub>T</sub> ??
H113	is/gets dark	Kr čet=imë-	sat=ap-	*i, *ü   *e	2 <sub>T</sub>
H204	knowl'ge/proud	jor	jor=ëŋ	*u   *ë?	2 <sub>T</sub> ??

H180    *yukola*              Ni joxël              P joxël       \*u | \*ë       2<sub>T</sub>  
 A north Eurasian Wanderwort, presumably not of OU origin; cf. DEWOS343,  
 CINCIUS s.v. 338b, 350b, Fas'mer IV 529. With cacuminal -L in Ostyak Kaz.

H277	Bauch	koNi	N xåni	*u   *ë	2
H442	elk	n'oγ	KM n'ow	*u   *ë	2
H97	stripe	DN čoxët	sowël	*u   *ë	2
H329	barks	korëytëyl-	xort-	*u   *ë	2

For the poor representation of stems of this type compared to that of type \*u/\*u, cf. the distribution of the  $1_T$  reflexes \*u/\*u v. \*i/\*i above.

#### Achromatic correspondence-type #:

H437	yukola rack	nor	nur	*ë   *u < *i	#
H719	threatens	Ni uus-	uusiyt-	*ë   *uu < *u < *i	#

With the length of the V \*-uu- in analogy, perhaps, to the length of the \*-ii- of H68 'praises/boasts'.

H584	birchbark bowl	say <sup>w</sup> én	saan	*ë   *ii < *i	#
------	----------------	---------------------	------	---------------	---

#### With secondary lengthening in pV due to contraction.

H325	extinguishes	Ni xuurët-	xariyl-	*ë   *i	#
H675	thin	woγ <sup>w</sup> ël	wowta	*ë   *i	#
H291	earwax	kont	xant	*ë   *i	#
H445	flesh	n'ay <sup>w</sup> i	n'owl	*ë   *i	#
H241	ashgrey	Ko xawës	N xåus	*ë   *i?	#?
H537	reed	paγ <sup>w</sup> ér	P poriy	*ë   *i?	#?
H505	dung	paγ <sup>w</sup> ët	P pox(")t	*ë   *i?	#?

If the vocalisms of the following two stems go back to an achromatic correspondence, we must reckon with either secondary lengthening in pO (\*ë | \*i > \*aa | \*i) or secondary shortening in pV (\*aa | \*ii > \*aa | \*i):

H266	'(hole); coffin'	kååm	xomël	*aa   *i	#? @?
H528	shoulderblade	påāŋkél	LU poŋkél	*aa   *i	#? @?

H743	(little bird)	Kaz kuuj	koj	*ë   *ü<i?	#?
------	---------------	----------	-----	------------	----

H101	dried fish	Ko čeemës	KO sääms	*e   *e?	3 <sup>1</sup>
------	------------	-----------	----------	----------	----------------

If pV had \*ää in this word, the correspondence-type is 4<sup>1</sup>. Without witnesses beyond OU it is impossible to decide.

#### Correspondence-type 3<sup>1</sup>:

H384	stick	mäγ <sup>w</sup> ér	mowr	*e   *e	3 <sup>1</sup>
H135	low	Ni teet	talk <sup>w</sup> a	*e   *e	3 <sup>1</sup>
H174	perch	jäγ <sup>w</sup>	VN jäyt	*e   *e	3 <sup>1</sup>
H571	tress/plait	säγ <sup>w</sup>	say	*e   *e	3 <sup>1</sup>
H61	thinks of	ärëγlë-	KM äryël-	*e   *e	3 <sup>1</sup>

H96	bud	čäγʷë	saw	*e   *e	3 <sup>1</sup>
H386	barbel	mäγʷtëγ	T mäwtëk	*e   *e	3 <sup>1</sup>
H515	gadfly	J päläm	paläm	*e   *e	3 <sup>1</sup>
H73	clear	ätér	atér	*e   *e	3 <sup>1</sup>
H774	near	Kaz l'EEP	l'apa	*e   *e	3 <sup>1</sup>
H211	moor-hen	jätérñi	jatri	*e   *e	3 <sup>1</sup>
H414	grows old	mät-	mat-	*e   *e	3 <sup>1</sup>
H199	spindle	jäŋʷët	LU int	*e   *e~*i?	3A <sup>1?</sup>
H567	turns	Vj seejëγ-	KM säjγ-	*e   *e?	3 <sup>1?</sup>
H538	hops	poreylë-	porγ-	*ë   *ë	3 <sup>1</sup>
H674	quacks	wok-	wox-	*ë   *ë	3 <sup>1</sup>
H524	ripens	pa/onč-	pons-	*i~*ë   *ë	3A <sup>1</sup>
H429	thinks	nom-	nom=s-	*i~*ë   *ë	3A <sup>1</sup>
H369	knallen	Lottékint-	N lotγ-	*ë   *ë?	3 <sup>1?</sup>
H628	stuffs	taγʷär-	toxr-	*ë   *ë	3 <sup>1</sup>

The last item may be a nasal-less variant of UEW537 \*tunke- '(hinein)drängen, stopfen, hineinstecken' >

-FM- \ ---- H / ----

H77	thin	t'älëγ	s'aaliγ	*e   *ää	4 <sup>11</sup>
H110	woodmeal	čäp	saap	*e   *ää	4 <sup>11</sup>
H134	stern-post	säγʷës	TJC tääs	*e   *ää	4 <sup>11</sup>
H585	cuts	säγʷär-	saayr-	*e   *ää	4 <sup>11</sup>
H366	deceives	läpältë-	laapl-	*e   *ää	4 <sup>11</sup>
H448	foal	DN n'eewër	LM n'aawër	*e   *ää	4 <sup>11?</sup>
H162	Fühlleine	V loorëm	toorom	*ë   *aa?	4 <sup>11?</sup>
H157	root	lor=t	K toor	*ë   *aa?	4 <sup>11?</sup>
H24	some/simple	äl(ë)	LU al (VS!)	*e   *ää?	4 <sup>11?</sup>
H665	sock	wäj	waaj	*e   *ää	4 <sup>11</sup>
H703	does	wär-	waar-	*e   *ää	4 <sup>11</sup>
H555	shakes	Ni reewij-	P rååw-	*e   *ää	4 <sup>11</sup>
H46	looks	änʷrëm- Ni	aanjʷat-	*i~*e   *ää	4A <sup>11</sup>
H694	otter	wantërë	wååntër	*i~*ë   *aa	4A <sup>11</sup>

Correspondence-type 5<sup>1</sup>:

H566	pulls (net)	sååjëp	KM soojëp	*aa   *aa	5 <sup>1</sup>
H477	helps	DN n'oot-	n'ååt-	*aa   *aa	5 <sup>1</sup>
H22	'fishtrap part'	Ni uutnë	oolt.m.it	*aa~åå   *aa	5 <sup>1</sup>
H647	trembles	tååréγ- Vj	tååry-	*i~*aa   *aa	5A <sup>1</sup>
H554	dust	reeγʷ	raaw	*œœ   *ää	5 <sup>1</sup>

D1117	fish weir	peeγ <sup>w</sup>	paaγ	*œœ   *ää	5 <sup>1</sup>
H240	stork	keeγ <sup>w</sup> ërt	KO kœøert	*œœ   *ää	5 <sup>1</sup>
H351	ring	Leek <sup>w</sup>	laak <sup>w</sup>	*œœ   *ää	5 <sup>1</sup>
H494	tap	peeγ <sup>w</sup>	paak <sup>w</sup>	*œœ   *ää	5 <sup>1</sup>
H576	magpie	seeγ	saak <sup>w</sup> ël'ëk	*œœ   *ää	5 <sup>1</sup>
H343	old	Kaz kaatra	kaatra	*ää   *ää	5 <sup>1</sup>
H411	fish roe	määräen	P marn	*ää   *e, *ää	5 <sup>1?</sup>

Correspondence-type 6<sub>T</sub>:

H168	nail/wedge	jääŋk l'eeŋk	*ää   *ii	6 <sub>T</sub> , but see [56]
------	------------	--------------	-----------	-------------------------------

H60	song	ääräęγ	eeriγ	*ää   *ii	6 <sub>T</sub>
H710	vivier	wääär	LU weeri	*ää   *ii	6 <sub>T</sub>
H643	evil, strong	tääräen	teeręŋ	*ää   *ii	6 <sub>T</sub>
H347	abspringen	Leek <sup>w</sup> en-	leeγp-	*œœ   *ii	6 <sub>T</sub>
H355	pulls out	Leek <sup>w</sup> en-	N leewët-	*œœ   *ii	6 <sub>T</sub>
H447	foam	n'eeγ <sup>w</sup> ër	n'eer	*œœ   *ii	6 <sub>T</sub>
H374	abuses, scolds	l'eeγ <sup>w</sup> =ët-	l'uuk-	*œœ   *üü ?	6 <sub>T</sub>
H380	guest, wedding	määj	muuj	*aa   *uu	6 <sub>T</sub>
H331	(plant)	kåås	xuus	*aa   *uu	6 <sub>T</sub>
H37	vivierpole	åån	uun	*aa   *uu	6 <sub>T</sub>
H560	wades	sooč-	suus-	*åå   *uu	6 <sub>T</sub>
H31	tree-nest	oompi	u(u)mi	*åå   *uu?	6 <sub>T</sub>

Correspondence-type 7<sub>T</sub>:

H478	hips	VVj piit'	pees'	*ii   *ii	7 <sub>T</sub>
H654	pretty	wiit'ëŋ	wees'ëŋ	*ii   *ii	7 <sub>T</sub>
H201	direction	jíir	jeer	*ii   *ii	7 <sub>T</sub>
H93	yearling bear	čiičëm	suusam	*ii   *uu	7 <sub>T</sub>
H90	dowry	Kr čiičëpsë	LO suusëm	*ii   *uu	7 <sub>T</sub>
H661	bad bear	uulëp	uutpi	*uu   *uu	7 <sub>T</sub>

## Like [417] 'becomes visible':

H238	button/cord	keeyëN	keenjen	*i   *ii
H41	dons/belt	ent=ëp (V!)	eentap	*i   *ii
H48	mother/HYS	ëŋki	eenk	*i   *ii

## Like [393] 'finger' or [402] 'spawn(s)':

H209	pays	juust- (Ni!)	just-	*aa~*uu   *u
H314	fears	kuu/oor=	xur-	*åå~*uu   *u

H456	wounds	n'ååLëy-	n'ulmi	*åå~*uu   *u
------	--------	----------	--------	--------------

Like [413] 'raven':

H455	swears	n'oolt-	n'ult-	*åå   *u
H257	adheres	kooLëjk-	KM k <sup>w</sup> olëxl-	*åå   *u
H111	piece	čoop	sup	*åå   *u
H345	sings	Looj-	lujγ-	*åå   *u

Like [399] 'wave' or [397] 'flea':

H656	clothes	uuč	us	*uu   *u
H328	crust, peel	DN xuurëp	kurëp	*uu   *u
H438	revenge	nuur	nur	*uu   *u
H706	kind	uur	ur	*uu   *u
H264	water flows, rises	Vj kuul'ëγ-	xul'iγl-	*uu   *u
H590	spark	suul	sultëm	*uu   *u

Like [384] \*käli=w 'in-law':

H186	north	jiil	LO it(i)	*ii   *i      cf. [383] *liw&li
------	-------	------	----------	---------------------------------

Like [388] 'neck':

H38	šipovnik	ääncëγ	iniγ	*ää   *i
-----	----------	--------	------	----------

Bleaching or colouring applied in either pO or pV in:

H361	spittle	Lüint'	lus'	*ii   *u
H205	sacrifice	jiir	P jur	*ii   *u
H64	divides	åårt- (Syn!)	urt-	*ii~*aa   *u
H390	in back (of room)	muul	mulya (TJC!)	*uu   *u~*i

# INDICES

Ostyak index verborum  
(Tremjukan unless  
otherwise specified)

ay <sup>w</sup>	[160]	iiki	[270]	käät ~ kiit	[390]
äγ <sup>w</sup> -	[144]	iil	[382]	kaatäm Vj	[296]
äγ <sup>w</sup> -	[143]	iin	[60]	kačnj	[209]
äγ <sup>w</sup>	[175]	iinjet-	[348]	kajarnji	[226]
ääγëN	[273]	iink VVj	[320]	kalī VVj	[17]
ååγët-	[375]	iit-	[381]	kälē	[180]
ååč	[235]	iit'eki	[315]	kalī	[225]
ääl	[252]	iitem Ko	[342]	kametyl	[80]
äälëm-	[265]	is Ni	[378]	kant Ni	[58]
äälëm J	[242]	isek- Ni	[311]	kant=ëγ	[228]
åålëŋ	[246]	jaγ <sup>w</sup>	[73]	kärē	[181]
åält-	[247]	jaŋk(w)- J	[212]	käri	[176]
äämp	[256]	jäŋk <sup>w</sup>	[188]	katē Ni	[416]
äät, iit=	[307]	jäntēl J	[189]	kečmëlt-	[66]
äät- VVj	[268]	jarγan	[230]	keeLëγ	[299]
äät'i	[243]	jej V	[420]	keem	[406]
aawët VVj	[365]	jel- VVj	[71]	kel-	[417]
äl J	[152]	jelwäγl-;		kenč-	[5]
ala- ~ ol-	[272]	jeel V	[64]	kiičém	[333]
älē	[153]	jepëγ	[4]	kiil- ~ keel=	[267]
ämér-	[216]	ji(γ)-	[108a]	kiiLi	[384]
an'eki	[224]	joγ Vj	[105]	kiinč	[308]
äNë	[140]	joγt-	[108]	kiirëγ	[338]
anjii	[222]	jöntëγ	[221]	koč-	[78]
anjwtëp	[81]	joom	[364]	köč-	[47]
äpél	[132]	jorëγl-	[115]	köč	[53]
äsél- (V!)	[14]	jot	[109]	köčm	[44]
čååč-	[239]	juuγ	[391]	koepëL	[147]
čääkën-	[263]	ka/ol-	[214]	köjp	[51]
čääñc	[259]	ka/otl(-)	[211]	kol	[82]
čačë DN	[120]	käγw	[133]	köl'ëγ-	[126]
čamë	[22]	kååj-	[238]	kol(a)-	[112]
ček-	[68]	kååjëm J	[283]	koltåγl	[113]
čenj	[219]	kåål-	[284]	kömp	[125]
čiiγw	[310]	kåålëp	[285]	kon'-	[117]
čönč VVj	[55]	kååN=, kiiN-	[317]	köN=ŋi	[124]
čopčeγ	[169]	kåånt	[368]	köNč	[336]
čuunč	[397]	kåånt-	[300]	könč	[48]
ejëm	[280]	käänt'- VVj	[233]	kooj- ~ kuuj-	[402]
entem	[61]	kääär, kiir=	[305]	kool-	[249]
		kääär, kiir	[306]	kool-	[394]
		kääär-, kiir=ëγ=	[385]	koolëm	[293]
		kåår	[349]	kooLëŋk	[413]
		kaartaŋ Kaz	[389]	koos	[371]

koos	[403]	lii- ~ lää=	[292]	n'åårëk	[358]
kor	[161]	liiγél	[322]	n'åårëm Ni	[376]
kor-	[116]	liil, läält-	[383]	n'al-	[27]
korëm-	[165]	liilëytë-	[314]	n'äl-	[196]
kos-	[36]	liis	[312]	n'el O	[151]
kosë DN	[220]	lüt	[301]	n'ašë Ni	[72]
köt	[43]	loγ	[34]	n'eLë	[16]
kotëmnëŋ	[167]	löj	[128]	n'er-	[10]
kotëŋ	[110]	lök-	[49]	n'er	[6]
kœčëγ	[145]	löl	[122]	n'iilëγ	[412]
kœj-	[137]	lol(a)-	[26]	n'iinc-	[340]
kœjëγ	[182]	loŋ	[38]	n'oγës	[104]
kœt	[390a]	loŋët-	[106]	n'oorëm	[298]
kuuj	[404]	löŋk	[56]	n'uur	[395]
kuul	[334]	LooγëL V	[86]	nääj	[251]
kuump	[399]	looγëltë-	[330]	nääŋk	[274]
kuun'ël',		loont	[297]	näm	[134]
kuun't'ël Ni	[401]	loorn'ë V	[77]	nek-	[69]
kuunëŋ	[405]	luk=ëm- Ni	[127]	nii(γʷ)-	[316]
kuuntëγl-	[295]	luuj, looj	[393]	nii(ŋ-) VVj	[313]
kuuri	[408]	luuŋk	[321]	niiŋk	[380]
kuut	[294]	luunt'ë DN	[83]	nöł	[123]
kuut'	[337]	luup	[329]	noo=m	[407]
kuut=ël J	[339]	mäγʷ	[194]	nööγér VK	[261]
l'oyitë-	[107]	mäγʷ-	[158]	öL	[45]
l'ök-	[42]	määγ+	[254]	olëp	[200]
layw	[23]	mäält-	[241]	ontëp	[202]
layw	[96]	maant' V	[240]	ontér	[201]
layʷ	[74]	måårti	[237]	ooγët	[363]
LååγëL	[367]	mäč	[146]	ooγw	[346]
läålëm-	[288]	mäLëŋk	[179]	ooγw	[347]
läåän	[351]	män'	[139]	oolna VVj	[76]
läåän't-, luun't-	[323]	mar-~mor-	[218]	oop, uup	[392]
läänki	[278]	märe	[173]	oopët,	
lääpët	[264]	märët- J	[217]	oopët= Kam	[370]
läår	[286]	mey	[21]	oopi	[282]
läärëγ	[255]	mel	[8]	oot V	[88]
läåsxij- Ni	[208]	men-	[2]	oxët Ni	[121]
lakʷn-	[85]	mer.ëm	[67]	pay	[18]
läl-, liil=t-	[186]	met.tä	[62]	payʷ-	[89]
läŋkʷr	[135]	mon	[79]	päγʷ-	[142]
läp-	[178]	morëŋk	[170]	pääči- V	[281]
läär	[191]	muuγél	[303]	pääči-	
lärämt-	[187]	n'åäl	[357]	påål'ax Kaz	[244]
lärpë	[232]	n'ääläm	[277]	pääñj	[262]
leyél-	[7]	n'äämëk	[260]	pååñk	[356]
leyw	[130]	n'aanxšëm DN	[354]	påås	[248]
Leekʷ	[250]	n'ääreγ	[253]	påås	[362]

pååsëγ-	[373]	saγw	[95]	täl	[185]
pååt-	[414]	saγw	[91]	teγ <sup>w</sup>	[157]
pač- ~ poč-	[162]	sååγël	[355]	tep-	[9]
päl-	[198]	sååj	[350]	tiiy <sup>w</sup>	[129]
päLëk	[195]	sååjëm	[234]	toγ	[35]
pänt-	[155]	sååm	[353]	toγël	[97]
päŋwk <sup>w</sup>	[141]	sääp=ël	[388]	toγët	[100]
parë	[227]	såår-	[287]	toj	[119]
pärt	[193]	såårt	[372]	tölëγ	[190]
pasël	[25]	sar=t Ko	[24]	tom(i)	[87]
peeγw	[257]	sååt	[352]	tontéγ	[231]
peečeγ V	[197]	sal-	[418]	toolt Vj	[92]
pel.it	[57]	säm	[156]	teexér Ko	[150]
pel-	[1]	säNëγ	[183]	toxët Ni	[111]
pel VVj	[13]	säNëγ	[279]	tuu(γ)-	[331]
pel	[65]	säŋk <sup>w</sup>	[174]	tuur	[411]
pelëm	[11]	sapës	[215]	uulëm, åålëm	[271]
perγi	[63]	sas(a)-	[210]	uulti	[327]
pet'ä=r	[59]	seγ	[12]	uum=	[319]
poγ-	[33]	seγ <sup>w</sup>	[50]	uunč-	[396]
poγ	[40]	sem	[15]	uunč J	[325]
poč; V pooč	[206]	siiγ <sup>w</sup>	[387]	uunjët	[345]
poj	[199]	siil-	[386]	uur	[410]
pöki	[54]	siilëγ	[309]	uuri	[344]
pol-	[32]	siir	[379]	uurnji	[343]
polën	[166]	soγ	[41]	uusil-	[326]
polij- Ni	[103]	soγw	[99]	wa/ol-	[213]
ponël-	[159]	soj	[29]	waγël'	[229]
poom	[377]	söj VVj	[46]	wååč	[289]
por-	[37]	söj	[39]	wååj=ëγ	[290]
por	[98]	söjγ-	[52]	wååk-	[245]
porki	[102]	sooč-	[291]	wåån	[369]
pos-	[163]	soosël V	[136]	wååpij- Ni	[236]
pot'	[101]	sor	[84]	wääsëγ	[266]
puuyël	[332]	sor=t	[203]	wäät'	[275]
puuγël	[302]	suurti	[415]	wač=ëγ- J	[28]
puuγlëm	[304]	t'aγw	[94]	waksar J	[118]
puuj	[400]	t'are- DN	[30]	wäl-	[148]
puuL	[328]	t'eerëγ-	[269]	wälëm	[177]
puul=ëp	[409]	t'et'ëk	[70]	walt-	[19]
puun	[398]	t'oxér DN	[164]	wasë	[31]
puunč-	[324]	taγw	[75]	wät	[138]
puurë DN	[205]	täγ <sup>w</sup>	[149]	wer	[3]
puusëj Ni	[168]	täγ <sup>w</sup> ksë-, täk <sup>w</sup> -	[154]	wiiyl-, wayl=	[366]
puut	[341]	täγ <sup>w</sup> m	[192]	woj	[207]
raγ=ëm	[223]	täälëk	[258]	wòl Kaz	[90]
rook	[374]	tååréγ	[361]	wol'i- Kaz	[20]
ruw Ni	[419]	taaxtëj DN	[359]	wont	[93]

wor	[204]	eesγ-	[311]	kir-	[385]
wœγ <sup>w</sup>	[171]	eet	[307]	kirtiγ LO	[389]
wurs'ik Ni	[131]	ëëwt LU	[345]	kis	[53]
wuučém	[335]	ëëxt P	[363]	kit	[390]
wuuj-	[318]	il' KU	[45]	kojp	[51]
xåáp Ni	[360]	is-	[14]	kon	[406]
xomës Ni	[114]	is	[378]	kon+	[124]
		is' P	[275]	koonc' TJ	[371]
		itγ=al-	[381]	kos-	[47]
Vogul index verborum (Sosva unless otherwise specified)		jaanjk	[188]	kos	[48]
		jaanjkélm LO	[172]	kosm	[44]
		jaant-	[189]	kot	[147]
		jaantew	[221]	kot'l'	[43]
ayt-	[143]	jääñx-	[212]	kuj LO	[401]
aayi	[175]	jäärn	[230]	k <sup>w</sup> (a)r- LU	[116]
aajët-	[375]	jakt-	[144]	k <sup>w</sup> al-	[267]
åäl-	[213]	jal-	[71]	k <sup>w</sup> aliγ	[184]
aalëm	[242]	jal=t-	[64]	k <sup>w</sup> arëx, k <sup>w</sup> arëk	[181]
aalm-	[265]	janiv	[140]	k <sup>w</sup> arkat- LU	[165]
åålt-	[247]	ji/a-	[108a]	l'aam	[364]
aamart-	[216]	jii VN	[420]	l'åänx	[250]
aamp	[256]	jipiγ	[4]	l'ak <sup>w</sup>	[42]
åån'iγ	[224]	jiw	[391]	laayël	[367]
åånip	[202]	jorëwl-	[115]	laap-	[178]
ååntil	[222]	jot	[109]	lak <sup>w</sup>	[49]
aanxa	[320]	jowt	[73]	läk <sup>w</sup> KO	[127]
aanjx <sup>w</sup>	[348]	joxt-	[108]	leenën	[278]
åås	[235]	kaal'	[182]	lees	[312]
aas' LO	[243]	kaans'-	[233]	lil, TJ läl	[383]
aat	[365]	kaaraj	[176]	lons'inj	[83]
aawa	[346]	kaasew	[220]	los'=, läås'=	[208]
aawi	[347]	kaat	[390a]	lowint-	[106]
ååwl	[246]	kååt'ël' P	[180]	lowt-	[107]
aawla	[121]	kaj-	[137]	luunt	[297]
aki	[270]	kal'γ-	[126]	luw	[34]
al-	[148]	kamp	[125]	luw	[96]
ala-~ olo- OV	[272]	kant	[58]	ma.na	[62]
ala	[153]	kasaj	[145]	maa	[21]
alpi	[152]	kassëml-	[66]	maaγ	[254]
an'	[60]	kaw	[133]	maayl	[194]
at, aat'i	[61]	kee(n)s	[308]	maajët	[303]
at	[138]	keel- LO	[417]	maalas'l-	[241]
at	[132]	keel=ëp	[416]	maaltip	[179]
eel'ëm	[280]	keeliγ	[299]	maans'i	[240]
(j)eelëm	[342]	keer-	[305]	maarext-	[217]
eelen	[382]	keer	[306]	måårti	[237]
eenjen	[273]	kil	[384]	määs KM	[146]
ees'	[315]	kins-	[5] ..	man'	[139]

mar.ëm	[67]	paaja	[262]	puut	[341]
mäxt- LU	[158]	paajt	[304]	puut'i	[332]
mil	[8]	paak <sup>w</sup>	[257]	puw-	[33]
min-	[2]	paal	[195]	puwl-	[142]
mon LO	[79]	påål'-	[199]	puwt-	[89]
morax	[170]	paaŋx	[356]	rååw-	[223]
mœær KU	[173]	påår	[205]	raax <sup>w</sup> LO	[374]
muurs-	[218]	pååra	[227]	reeγ	[419]
n'aal	[357]	paart	[193]	s'aariγ-	[269]
n'aalëj- KU	[196]	påås	[248]	s'aŋs'i	[70]
n'aar	[253]	paasγ-	[373]	s'oxri N	[164]
n'aarëm N	[376]	paasiγ	[197]	s'ury-	[30]
n'aariγ	[358]	paassa	[362]	s'uŋk	[94]
n'aaxs'am	[354]	paawël	[302]	saayla	[355]
n'äl' (/a/) N	[151]	pal.it	[57]	sååjëm	[234]
n'as	[72]	pal'	[65]	šääkäp- LU	[263]
n'eelëm	[277]	pänk P	[141]	saal-	[418]
n'er=ëmt- KM	[10]	pant-	[155]	saal'	[350]
n'ilä	[16]	pär LU	[63]	saam	[353]
n'inq <sup>w</sup>	[380]	pas'a=r	[59]	saaniγ	[183]
n'ir	[6]	peel-	[198]	saajk	[219]
n'ix LM	[274]	peesat-	[281]	saajk=ëp VN	[174]
n'ola=nt-	[27]	peet-	[276]	saans	[259]
n'ololow	[412]	piγ	[18]	såås-	[239]
n'oxës	[104]	pil-	[1]	saat	[264]
n'œœmkëm KM	[260]	pit'i LO	[13]	saat	[352]
n'ur LU	[395]	pit'mi	[11]	saj	[128]
n'uuns-	[340]	polyalt-	[103]	sak-	[68]
n'uurëm	[298]	pon-	[159]	sal'γ-	[52]
naayr LU	[261]	ponal	[166]	sam	[156]
naaj	[251]	ponš P	[206]	seel	[309]
näk- TC	[69]	pool'ëx KO	[244]	seeniγ	[279]
nal	[123]	porëe TJC	[98]	seeŋk <sup>w</sup>	[310]
naliman	[16]	porxaj	[102]	siγ	[12]
nam	[134]	pos-	[163]	siγës	[387]
nee	[313]	pos-	[162]	siltaal-	[386]
neeyl-	[316]	pos'	[101]	sim	[15]
num=ël	[407]	puj P	[400]	sip	[388]
olën	[76]	puki	[54]	sir	[379]
oomël LO	[200]	pul=p	[409]	sis	[55]
oontër LO	[201]	pum	[377]	sol'	[29]
os=γ-	[28]	pun	[398]	soma	[22]
ošaa T	[31]	pup	[40]	sor	[84]
ow	[160]	pur-	[37]	sori	[24]
owta	[81]	put	[414]	sort	[372]
oxsar	[118]	putaas- LU	[32]	sosiy	[169]
œœl KU	[252]	puul	[328]	sosl(a)	[136]
œœt- KM	[268]	puuns-	[324]	sossa	[120]

sow	[95]	toont N	[231]	wiγr	[3]
sow	[99]	toos LU	[215]	wol'γ-	[20]
su(u)r=l-	[287]	tot, tuw	[87]	wolt-	[19]
suj	[39]	tow	[23]	woonx=ap LO	[245]
sülii TC	[46]	tow-	[330]	woopl- KM	[236]
surti	[415]	towēl	[97]	xååj-	[238]
sus	[397]	towt	[105]	xåål-	[214]
suul'i	[91]	towt-	[74]	xåålæ	[225]
suus-	[291]	toxët	[100]	xåånt	[228]
suw	[41]	tul'=a	[393]	xaant=a LO	[368]
tay	[154]	tüŋkēl' TJ	[56]	xaap	[360]
tay	[154]	tur	[411]	xaar	[349]
taayl	[185]	tuu=l-	[331]	xåårxaj	[226]
taajët	[301]	tuuj=a	[75]	xåås+woj	[209]
taakëm	[192]	tuulmant-	[288]	xaassi	[333]
taal +	[190]	tuult N	[92]	xååt	[294]
taal-	[186]	tuup	[329]	xååtal	[211]
taan	[351]	tuur	[286]	xal'p	[17]
taar	[191]	tuus'=t-	[323]	xanël	[405]
tååras	[203]	tuw	[38]	xas=m=at-	[78]
taarat-	[187]	ula	[90]	xo(o)wt	[82]
taariy	[361]	uns-	[396]	xol-	[112]
taarka	[255]	up	[392]	xol	[113]
tåås-	[210]	ur	[410]	xolëŋka LO	[167]
taatël	[258]	ut	[88]	xomës	[114]
tååwt P	[157]	uuj	[290]	xomi	[80]
taaxt	[359]	uulmaj-	[271]	xon'-	[117]
takʷ	[50]	uulta	[327]	xool- LO	[249]
tal	[122]	uum=	[319]	xoontl- LO	[295]
tanjkél TJC	[86]	uunt N	[93]	xori	[161]
tanjkér	[135]	uup	[282]	xotaŋ	[110]
tarën' P	[77]	uuraj	[344]	xuj	[404]
tariy	[150]	uurin	[343]	xul'=ëm	[402]
taw	[130]	uus	[325]	xul=t=ne (pon)	[394]
tawant	[149]	uus	[289]	xulax	[413]
tawt	[129]	uusint-	[326]	xulëp	[285]
taxn-	[85]	uusma	[335]	xump	[399]
tee- ~ taa-	[292]	uut-	[370]	xuns'-	[36]
teeliyt-	[314]	waay-	[318]	xura	[408]
teerpi	[232]	waay	[171]	xus	[403]
tëët KM	[322]	waayl-	[366]	xuul-	[284]
tëëw KO	[321]	wååj	[207]	xuul	[334]
tiyl-	[7]	wåål'	[229]	xuul'ëm	[283]
tip-	[9]	waalëm	[177]	xuun-	[317]
tol-	[26]	waanjën	[369]	xuuns LO	[336]
tol'ëx, tal'ëx	[119]	wåår	[204]	xuunt-	[300]
toliy	[111]	waas	[266]	xuuntl-	
too TJC	[35]	wars'ëx	[131]	xuurëm	[293]

xuuriy	[338]	ant	[209]	breast	[194]
xuusna	[337]	arm; sleeve	[301]	breath(es)	[383]
xuut-a LU	[339]	armful	[252]	brings	[331]
xuut-	[296]	arrives, attains	[187]	brook; flows	[234]
		arrow	[357]	bundle, ball	[181]
		ashes	[283]	burning coal	[46]
		autumn	[50]	carries (away?)	[300]
		avoids, dodges	[385]	cartilage	[358]
		awl, drill, borer	[98]	casts/throws	
		back	[55]	(net)	[158]
(berry)	[170]	bag	[338]	cedar	[322]
(berry)	[169]	bait, medicine	[232]	cheek	[304]
(bird;		barbel	[220]	chews	[74]
Motacilla?)	[131]	bark of birch,		chin; gums	[273]
(bird), loon	[359]	outer	[231]	claw, nail	[48]
(cuts)	[386]	bark	[306]	clay, loam	[91]
(de)scends	[366]	barks	[370]	closes, covers	[155]
(duck)	[389]	bast, bark; hide	[99]	coagulate(d	
(duck)	[350]	bathes	[142]	blood)	[416]
(fish weir)	[335]	bearskull	[345]	collar,	
(fish; burbot?)	[12]	becomes visible	[417]	neckband	[374]
(fish); ?		beginning, end	[246]	come, arrives	[108]
Acipenser	[176]	Bein-,		comes; remains	[108a]
(fish)hook	[72]	Pfotenfell	[147]	congeals	[189]
(fishes)	[394]	believes, trusts	[143]	corpse	[225]
(fishtrap)	[248]	big; older male		counts	[106]
(grows) fat	[296]	kin	[140]	crane	[361]
(gull)	[387]	birch	[337]	cross-strut (in	
(hu)man;		birchbark		boat)	[100]
phratry	[240]	vessel	[44]	crosses, passes	[396]
(in-law)	[384]	bird-cherry	[364]	crow	[343]
(moist) heat	[219]	birds' venue	[237]	cuts	[19]
(n)uncle	[270]	bites, eats	[37]	cuts, chops, hits	[144]
(Njelma)	[325]	blood	[3]	cutting tool	[164]
(pole)	[31]	blows	[33]	dad!/grand-	
(root vegetable)	[86]	board	[193]	father	[243]
(shoe)	[308]	boat	[360]	Dammholz,	
(tree-fungus)	[279]	bodily cavity;		pole	[355]
(wild) animal	[290]	hole	[201]	daughter	[175]
(woman)	[251]	bog	[172]	daughter-in-law	[139]
(woodpecker)	[226]	boils, cooks	[276]	day	[211]
above	[407]	bone	[34]	deep	[8]
across	[327]	bow	[73]	dense	[42]
adds on	[247]	bowstring	[221]	dew, moisture	[180]
adult male	[404]	branch	[23]	diarrhea, feces	[101]
anger; smoke,		breaks; rues,		dies	[214]
fog	[58]	'hurts	[269]	DISTAL	
angry, swears	[165]	breast (pocket)	[332]	DEICTIC	[87]

dog	[256]	forest; wild	[93]	in-law	[202]
door	[347]	forgets; gets		intestinal worm	[336]
dragnet	[111]	lost	[115]	is, lives	[213]
dream, sleep	[271]	four	[16]	is released	[208]
dries up;		fox	[118]	is born; kin;	
stiffens	[287]	freezes;		native	[120]
dries	[210]	ice layer(s)	[414]	is smoky/bitter	[66]
drips	[373]	friend, mate;		isthmus,	
duck	[266]	with	[109]	channel	[363]
ear	[65]	full	[154]	jumps	[381]
earth	[21]	full	[185]	jumps	[49]
eats	[292]	gets wet, soaks	[162]	kettle, pot	[341]
edge, side	[309]	gets lost	[9]	kills	[148]
egg; scrotum,		gets stuck	[85]	knee	[259]
penis	[79]	gills; gums	[354]	knife	[145]
eight	[412]	glue; is gluey	[280]	ladle	[319]
elbow	[124]	goes	[71]	lake	[286]
empty	[258]	goes	[2]	lake	[35]
enters;		goose	[297]	lands/drops,	
has room	[178]	grass	[377]	falls	[14]
evening	[307]	gums	[167]	larch	[274]
eye; kidney	[156]	hair	[365]	licks	[27]
fat	[207]	hair; wool;		lies prone, falls	[80]
father-in-law	[392]	feathers	[398]	lifts; rises	[265]
fathom, lap	[122]	hairless (hide)	[395]	lightens	[418]
fears	[1]	half; spouse	[195]	lip	[11]
feather, wing	[97]	hand	[390a]	listens	[295]
female	[182]	hardens; steel	[268]	liver	[303]
fever; magic	[92]	head (esp. of		lives; spring	[64]
fills, stuffs full	[154]	bear)	[346]	lizard	[136]
finger	[393]	hears	[249]	loosens,	
finger; thumb	[262]	heart	[15]	rips open	[281]
fir	[150]	heat	[419]	louse	[192]
fire	[157]	helve, shaft	[123]	maggot	[380]
fish	[334]	hemp, flax	[166]	male (animal)	[349]
fish roe	[205]	high, tall; long	[57]	marrow	[177]
fish-scale	[17]	hits, cuts	[245]	meadow;	
five; ten	[138]	hits, breaks	[174]	(swamp)	[298]
flea	[397]	hoarfrost	[29]	meets, touches	[238]
flies	[7]	honey	[254]	melts	[26]
flings; scoops	[317]	horse	[96]	metal,	
flows/drips	[30]	human(s), sky,		yellowish	[77]
fly agaric	[356]	god	[342]	metal, bright	[76]
fog; smoke	[310]	hundred	[352]	middle,	
foot	[367]	hunts; hunting		interstice	[43]
fore ~ far	[382]	party	[228]	mitten	[362]
forearm,		ice crust	[199]	mixes	[314]
lower leg	[84]	ice	[188]	Morgenröte	[401]

morning	[113]	PROXIMAL	sits/puts in boat	[186]
mould, mildew	[333]	DEIXIS	six	[294]
mountain ash	[59]	pudas	ski	[105]
mouse	[135]	pulls, hangs	skin, body	[152]
mud	[161]	pulls out; opens	sleeping-tent	[200]
name	[134]	pus, rot;	sleeps	[272]
narrows	[24]	decay(s)	small, puny	[275]
near, kin; nears	[223]	quiet, calm;	smell, taste	[132]
neck	[388]	deep	smoke; dust	[168]
needle eye	[40]	quiver	smoulders	[47]
NEG/PROHIB	[61]	raft	snare	[312]
nest	[13]	raven	soft	[260]
net needle	[215]	raw; naked	son	[18]
net	[285]	rear	sound, voice	[39]
night; 24 hours	[420]	rear,	space under	
nit	[183]	back(wards)	arm	[405]
oar	[329]	reindeer (calf)	span	[203]
observes	[236]	ring	sparrow	[70]
older		riverbed	spawn(s)	[402]
female kin	[282]	rope	spends night	[284]
on heat, rut	[137]	row; kind, way	spit; insect's	
opens X;		rows	stinger	[81]
X is open	[324]	ruff(e) (fish)	spits, saliva	[52]
other (side)	[242]	ruins	splashes	[103]
outside	[406]	s3 PRO	sprays, ?blows	[32]
overfull	[125]	sable, marten	spring;	
ovine	[235]	saddle	floodwater	[75]
owl	[4]	Samoyed	squirrel	[278]
partridge	[320]	scale, fishskin	stabs, stops	
peels, flays	[116]	scoops	(shut)	[409]
period of time	[173]	scrapes	staff	[41]
piece; bites,		seeks	stamps	[69]
eats	[328]	sees, finds;	stands	[323]
pike	[372]	guards	stands up, rises	[267]
pine/fir/spruce	[82]	sees; is visible	star	[371]
pinecone	[257]	seven; week	steals; secret	[288]
plaits, twines,		shadow-soul	stiffens	[67]
spins	[159]	shadow; back	stone	[133]
plaits; dons		shadow-soul	straight	[22]
shoes	[305]	shaman's drum	stream, current	[160]
pole	[90]	shines	strength, power	[171]
pole, rod, bar	[121]	shoulder	stretches	[340]
pours out	[239]	shoulder, hip	submerges;	
praises	[311]	shoves	dives	[217]
presses out	[163]	shuts eyes	submerges;	
pricks	[89]	side	dives	[218]
pricks	[198]	side, edge;	suffocates	[263]
prop	[146]	direction	summer;	

thaw(s)	[38]	whirlwind	[102]
support,		wife of spouse	[224]
treestump	[368]	winter	[190]
swallows	[196]	woman	[313]
swamp	[299]	wood(ed hill)	[204]
swan	[110]	word/song	[95]
swimbladder,		yawns	[326]
belly	[54]	young	
tail	[206]	(rein)deer	[415]
tail	[244]	younger sibling	[315]
tears	[10]		
thin ice	[94]		
thing	[88]		
three	[293]		
throat	[411]		
tickles/itches	[126]		
tip	[119]		
tongue, mouth	[277]		
tooth	[141]		
top, surface	[153]		
touches	[241]		
town; fishes	[289]		
track, path, trail	[250]		
tree; conifer	[391]		
treesap; moist	[45]		
treeslime, sap	[151]		
trough	[408]		
turns/wanders	[212]		
tussock	[114]		
twenty	[403]		
twig; supple	[6]		
two	[390]		
urinates	[36]		
valley	[229]		
vein; sinew	[351]		
vein; root; fibre	[191]		
village	[302]		
vomits	[375]		
walks, wades	[291]		
warm, soft	[83]		
warm	[179]		
washes, soaks	[107]		
wastes away	[233]		
wave	[399]		
wears out, falls			
out	[112]		
wedge, peg	[56]		
which	[62]		

Semasiological  
index (semantic axes)

- bearer ~ foot [368]  
bites ~ bait [232]  
board ~ raft [227]  
deep ~ calm [149]  
door ~ outside [195]  
eats ~ enters [98]  
eye ~ kidney [156]  
far ~ fore [382]  
fire-remnant ~ ashes [283]  
flea ~ flees [397]  
fox ~ skin [118]  
high ~ conceals [155]  
high place ~ forest [204]  
high place ~ nose, verruca [204]  
holds ~ closes [155]  
hunts ~ game [228]  
lives ~ fresh water [64]  
mood ~ vapour [58]  
on heat ~ resounds [51]  
outside ~ edge [406]  
period of time ~ stretch [173]  
searches ~ circle [5]  
steals ~ secret [288]  
swim ~ sound [363]  
thin, narrow ~ sickly [233]  
through ~ drills [98]  
tight, stiff ~ narrow, compressed [67]  
top ~ bottom [63]



